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LA's COMPUTER MAGAZINE
May 29, 1989 • #57

# MICROTIMES™

# VC

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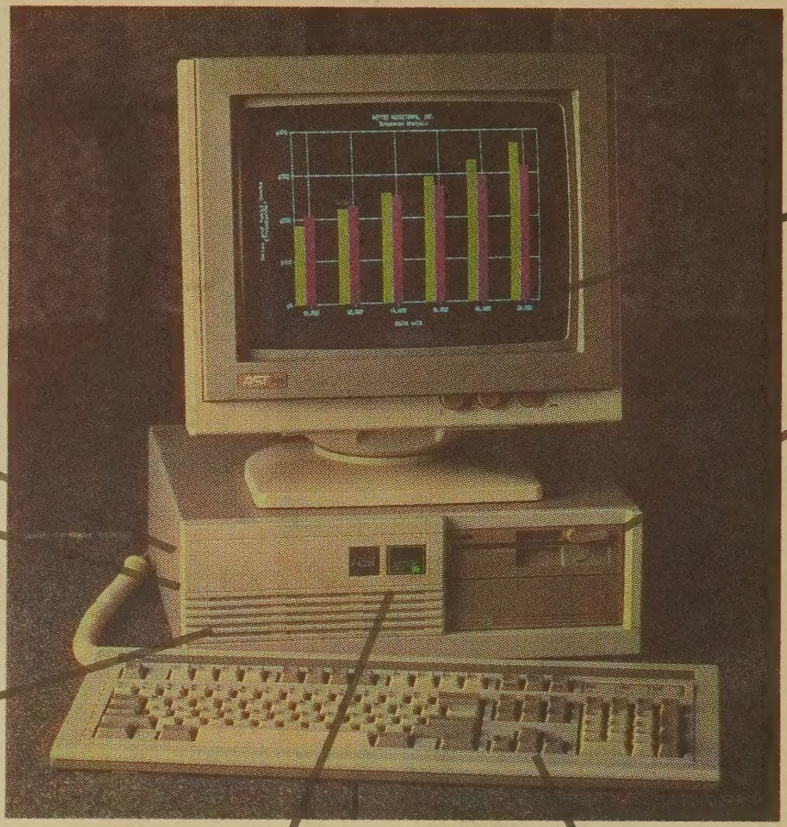

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May 29, 1989 ISSUE #57
MICROTIMES™

## FEATURES

**61**

**LANs: The Next Generation**
**By Wayne A. Yacco**
Formerly limited to large corporations, local area networks, driven by office automation and groupware, are becoming an indispensable tool for small and medium-sized businesses.

**66**

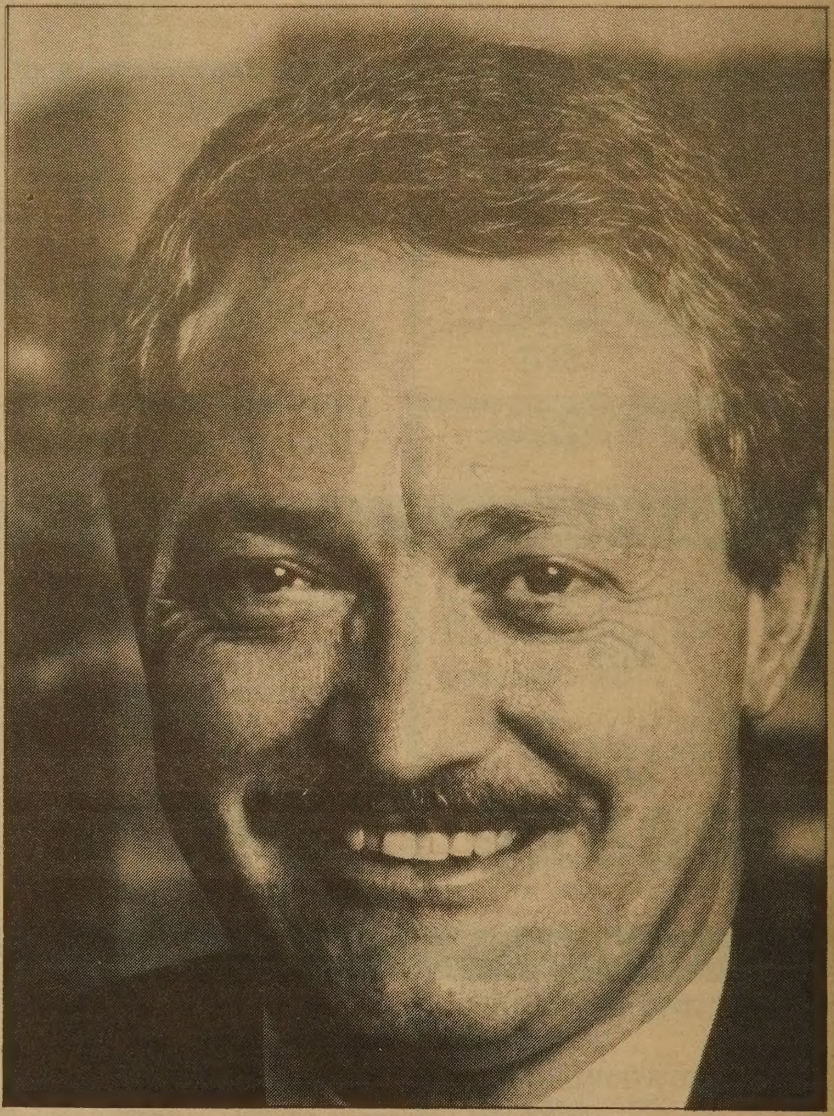
**The MItsubishi 286L**
**By Ed Kahn**
A desktop-laptop hybrid, this machine offers power and expandability.

## COVER STORY

**38 VC: The Inside Story**

**By Dennis Erokan and Mary Eisenhart**
**Cover and contents photos: Jim Marshall**

Venture capitalist Frank Caufield, whose firm was instrumental in the startups of such companies as Lotus, Genentech, and Sun, discusses the rewards and pitfalls of the VC business and its role in driving innovation.



## ISSUES

**34 Realizable Fantasies**
**By Jim Warren**
The abysmal quality of public education threatens the industry's well-being.

**36 Guest Editorial**
A high-tech headhunter suggests that outmoded ideas and closed-mindedness may be keeping some firms from attracting the best employees.

**118 Dvorak's Last Column**
**By John C. Dvorak**
Dvorak meets the ultimate computer salesman.

## COLUMNS

**80 UNIX**
**By Bennett Falk**
X—MIT's windowing interface.

**88 Amiga**
**By Matthew Leeds**
WordPerfect flip-flops on Amiga support.

**84 Atari ST**
**By David Hawkins**
Signum, a sophisticated document preparation package.

**86 Apple II**
**By Mike Markowitz**
Battery woes for IIGS owners.

## DEPARTMENTS

**10 Calendar of Events**
**23 News and Analysis**
**By Paul Hoffman**
**18 PC Buyers Guide**
**90 User Group Network**
**112 Classifieds**
**116 Index of Advertisers**

## Mac @ Work

**70 Aldus Persuasion**
**By Mary Eisenhart**
An elegant interface makes it easy to design effective slide presentations.
**74 BMUG**
**By David Morgenstern**
**78 Macintosh Buyers Guide**

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| Paul Mace | Mace Utilities | 59. |
| Paul Mace | H Test/H Format | 59. |
| PCSG | Lightning | 55. |
| Peter Norton | Norton Advanced | 79. |
| Peter Norton | Norton Commander | 59. |
| Peter Norton | Norton Editor | 42. |
| Peter Norton | Norton Utilities | 49. |
| Prime Solutions | Disk Technician Plus | 79. |
| Prime Solutions | Disk Technician Adv. | 115. |
| Quaid | Copywrite w/Zero Disk | 65. |
| Quarterdeck | Desqview | 79. |
| Rightsoft | Rightwriter | 52. |
| Softlogic Solutions | Disk Optimizer | 43. |
| Softlogic Solutions | Software Carousel | 49. |
| Software Directions | Print Q | 85. |
| Traveling Software | Laplink Plus | 79. |
| Wallsoft | UI Programmer 2.0 | 369. |
| Wallsoft | The Documentor | 189. |
| White Crane | Brooklyn Bridge | 79. |
| Word Perfect | Word Perfect Library | 69. |

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| | | |
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| Micropro | Wordstar 5.0 | 249. |
| Software Publishing | PFS: Pro Write | 145. |
| Wordperfect | Word Perfect 5.0 | 239. |

#### BORLAND

| | |
|---|---|
| Quattro | 165. |
| Sidekick Plus | 129. |
| Turbo Pascal 5.0 | 97. |
| Turbo Pascal Propack | 169. |
| Turbo C | 97. |
| Turbo C Propak | 169. |
| Eureka | 115. |
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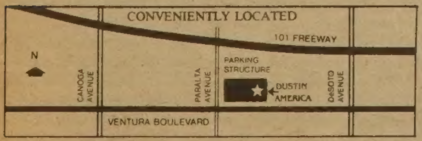

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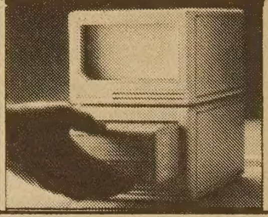

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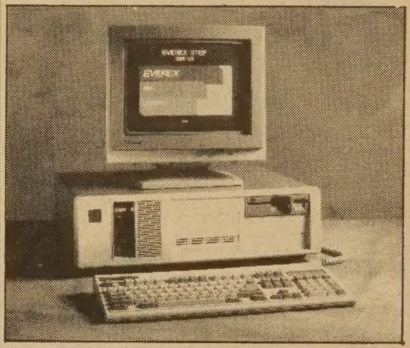

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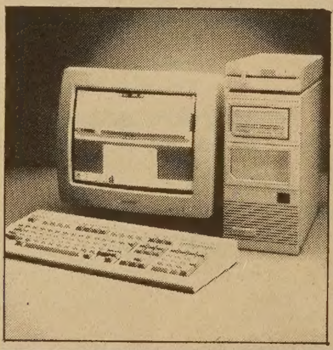

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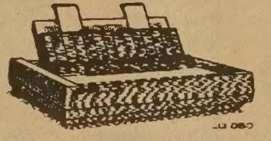

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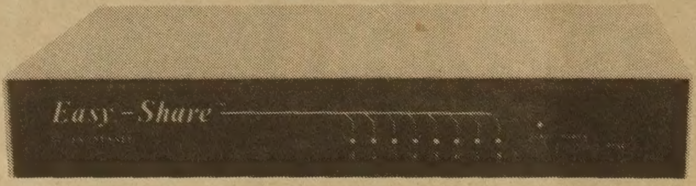

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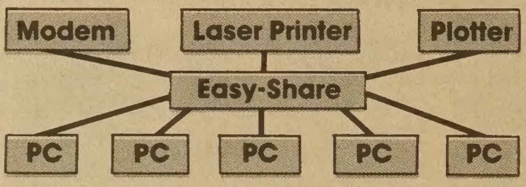

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**May 27 Computer Show.** Pasadena. East-West Computer Shows. Call: (415)388-8893.

**May 31–June 1 Portable Computing '89.** Santa Clara. International Data Group. Call: 1-800-225-4698.

**June 3 Computer Marketplace.** Pomona. RK Productions. Call: 1-800-252-7927

**June 3–5 Showbiz Expo.** Los Angeles. Live Time, Inc. Call: (213)668-1811.

**June 3 Shop Till Ya Drop Computer Swap.** Anaheim. Richard James. Call: 1-800-433-7469.

**June 3–4 Computer EXPO.** Canoga Park. Custom Promotions Call: Linda Hollingsworth, (808)251-2589.

**June 4 Computer Show.** Oxnard. East-West Computer Shows. Call: (415)388-8893.

**June 4–8 1989 IEEE International Conference: Computer Vision & Pattern Recognition.** San Diego. The Computer Society Of The IEEE. Call: Dr. Rama Chellappa, (213)743-8559.

**June 5–8 1989 AIIM Show And Conference.** San Francisco. Association For Information And Image Management. Call: (301)587-8202.

**June 5 IEEE Workshop On AI For Computer Vision.** San Diego. The Computer Society Of The IEEE. Call: (213)743-8559.

**June 5–9 9th International Conference On Distributed Computing Systems.** Newport Beach. The Computer Society Of The IEEE. Call: Kane Kim, (714)856-5542.

**June 5–8 Autodesk Expo '89.** Anaheim. Autodesk Promotions. Call: (415)332-2344, ext. 2799.

**June 6 Computer Show.** San Diego. East-West Computer Shows. Call: (415)388-8893.

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**PHOEBE 5.0** (#910) A client and company management database program to handle appointments, year-to-date sales, etc.

## DATABASE PROGRAMS

**PC-FILE:dB Version 1** (#1010, #1011, & #1012) Buttonware's newest database program reads dBase format .DBF files. Req. 416K & hard disk.

**PC-FILE PLUS 2.0** (#493, #494, & #495) 30 New & enhanced features! Req. 384K.

**INSTANT RECALL 1.64F** (#479) Memory-resident database program with word processor.

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**BUSINESS CONTACTS MANAGER 1.10** (#1214 & #1215) Superb database program for keeping track of friends, relatives, clients, etc. Req. 512K (hard disk recommended).

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**PRINTMASTER PLUS GRAPHICS LIBRARIES** (#355, #356, & #357) Three disk set containing over 180 great graphics for PrintMaster Plus.

**PRINTSHOP GRAPHICS LIBRARIES** (#354, #722, & #723) Three disks of graphics for Print Shop.

**FIRST PUBLISHER GRAPHICS LIBRARIES** (#833, #834, & #835) Three disks of pictures and symbols for First Publisher.

**CLIP ART CONVERSION UTILITIES** (#505) Convert to / from Print Shop, PrintMaster, convert Print Shop or PrintMaster to First Publisher, and more.

**PC WATCHES - EGA DEMO** (#634) Three on-screen demo watches to watch! Req. EGA.

## COMMUNICATIONS

**PROCOMM 2.4.3** (#536) The latest shareware version of the extremely powerful yet easy-to-use modem program!

**EQUAL PARTNERS 3.10** (#782) Transfer data between 5 1/4" floppy-based PCs and 3 1/2" convertibles & laptops. Req. RS-232 hardware.

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**HOW TO GET STARTED USING MOST SOFTWARE** (#25) Make this disk your first buy if you're new to the world of Public Domain & Shareware!

**TUTOR 4.41** (#99) Nine tutorials covering DOS and computer basics!

**DOS 3.3 HELP 1.1** (#112) Get help on all DOS commands up through version 3.3.

**DOS "TYPE" UTILITIES** (#889) NEVER use the command "TYPE" to read text files. Six alternatives, plus LIST 6.4A.

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**ASTROLOGY 9.5** (#1) Excellent chart calculation program with graphics printout. Req. CGA for charting.

**BIORHYTHMS** (#424) Prints chart and compares two people for compatibility. Includes 4 different biorhythm programs.

**PIANOMAN & PLAYER PIANO 4.0** (#126 & #127) Latest version. Create musical tunes at your keyboard. Includes tune files to play or edit.

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**BANNERIFIC** (#347) Make different size banners. Easy-to-use.

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**TERRA-TIME 3.0** (#931) World map displays local time in 44 global cities. Compute time zone differences.

**H&P CALENDAR 1.2** (#921) Print out monthly calendars with seasonal graphics and comments. Req. CGA and dot matrix printer.

**SCIENTIFIC/MATH CALCULATOR 2.0** (#655) Does 250 mathematical and physical functions. Great!!

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**June 10 Shop Till Ya Drop Computer Swap.** Los Angeles. Microshows. Call: 1-800-433-7469.

**June 10 VWdBUG 3rd Annual dDAY Fair-1989.** Woodland Hills. Valley West dBASE User's Group. Call: (818)988-6337.

**June 11 Computer Show.** Culver City. East-West Computer Shows. Call: (415)388-8893.

**June 11–14 Second Annual Clipper Developers Conference.** Los Angeles. Nantucket Corp. Call: 1-800-848-2547.

**June 11 Shop Till Ya Drop Computer Swap.** Glendale. Richard James. Call: 1-800-433-7469.

**June 12–15 DSS–89.** San Diego. Institute Of Management Sciences. Call: 1-800-343-0062.

**June 12–16 USENIX Technical Conference And Exhibition.** Baltimore. The Professional And Technical UNIX Association. Call: (714)588-8649.

**June 13–16 Effective Skills For Technical Managers Course.** Los Angeles. Integrated Computer Systems. Call: 1-800-421-8166.

**June 13–15 Distributed Database Systems Short Course.** Los Angeles. UCLA Extension. Call: (213)825-1901.

**June 14–16 MacHack '89.** Ann Arbor, MI. University of Michigan. Call: (313)665-4444.

**June 14 WordStar Seminar.** Pasadena. Intermation. Call: (818)796-9371.

**June 17 Shop Till Ya Drop Computer Swap.** Glendale. Richard James. Call: 1-800-433-7469.

**June 18 Computer Show.** San Bernardino. East-West Computer Shows. Call: (415)388-8893.

**June 19–22 TCP/IP OSI Internetworking Tutorials.** Dallas, TX. Advanced Computing Environments. Call: (415)941-3399.

**June 20–23 UNIX Hands-on Workshop.** Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

**June 20–23 Image Processing & Machine Vision Course.** Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421–8166.

**June 21-24 Interconnections '89 Conference.** San Diego. Independent Computer Consultants Association. Call: 1-800-GET-ICCA.

**June 21–24 Independent Computer Consultants Association's Annual Conference.** San Diego. ICCA. Call: 1-800-GET-ICCA.

**June 21 Free Solomon III Seminar.** Los Angeles. Wilson Computer Services. Call: (213)322-6605.

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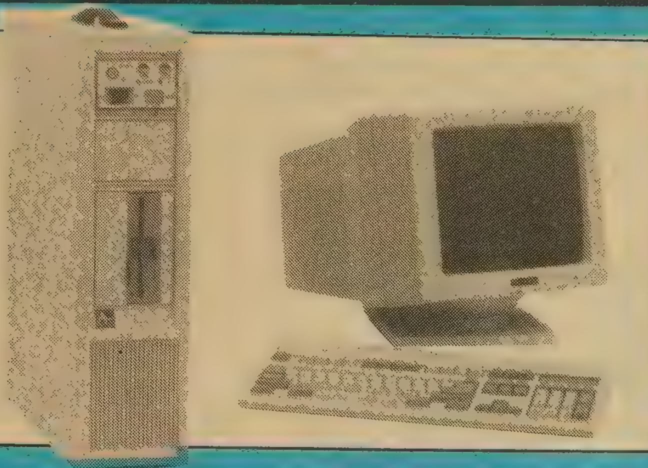

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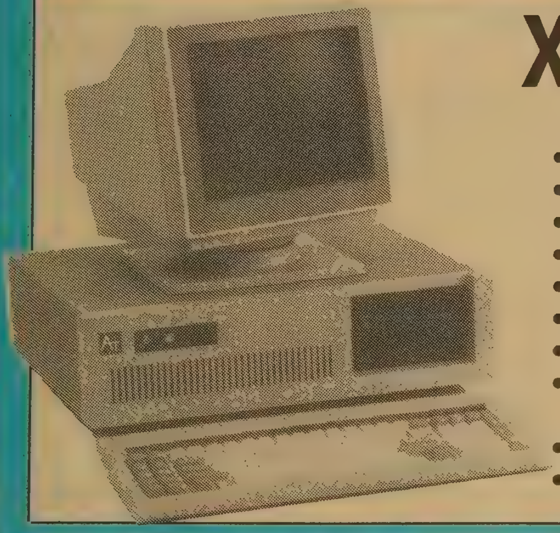

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| CTX 2431 VGA | 369 |
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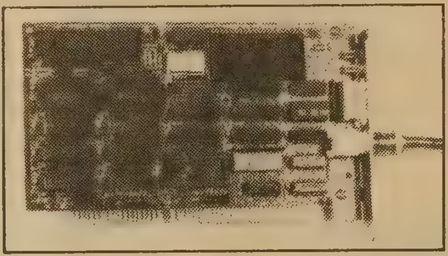

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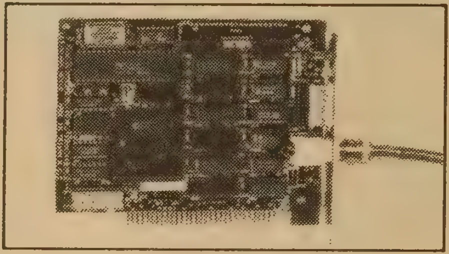

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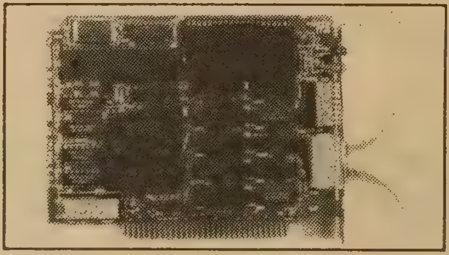

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**June 25 Computer Show.** Oceanside. East-West Computer Shows. Call: (415)388-8893.

**June 26–29 Basic Project Management: Planning, Scheduling, And Control Information Meeting.** Los Angeles. American Management Association. Call: Vern Lautner, (212)903–8208.

**June 27–28 Procurement Fair.** Santa Clara. Industry Council For Small Business Development. Call: (408)974-0223.

**June 27–August 3 Introduction To Electronic Music: Sound Synthesis & MIDI.** Los Angeles. UCLA Extension. Call: (213)825-4191.

**July 8 Shop Till Ya Drop Computer Swap.** Los Angeles. Richard James. Call: 1-800-433-7469.

**July 9 Shop Till Ya Drop Computer Swap.** Glendale. Richard James. Call: 1-800-433-7469.

**July 10–14 C Language Intensive: An Application-Based Seminar.** Techmart, Santa Clara. University of California Extension, Santa Cruz. Call: (408)429-4535.

**July 11-13 The Desktop Presentation Graphics Conference And Exposition.** Los Angeles. Desktop Presentations, Inc. Call: Dr. William Coggshall, (415)968-4105.

**July 11–14 Computer Graphics: Software Techniques & Hardware Components Course.** Los Angeles. Integrated Computer Systems. Call: 1-800-421-8166.

**July 11–14 C Programming Hands-on Workshop.** San Diego. Integrated Computer Systems. Call: 1-800-421-8166.

**July 11–14 Troubleshooting Datacomm & Networks: Hands-on Workshop.** San Diego. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

**July 11–13 1989 Desktop Presentation Graphics Conference And Exposition.** Los Angeles. Cambridge Marketing, Inc. Call: 1-800-262-3378.

**July 11–14 Artificial Neural Networks Course.** Techmart, Santa Clara. University of California Extension, Santa Cruz. Call: Institute in Computer Science, (408)429-4535.

**July 11–14 Writing Better Computer Software Documentation For Users Course.** Santa Cruz. University of California Extension, Santa Cruz. Call: (408)429-4535.

**July 11–14 Fault Tolerant Computing Course.** Techmart, Santa Clara. University of California Extension, Santa Cruz. Call: (408)429-4535.

**July 12–14 Communication Skills For Technical Managers Course.** San Diego. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

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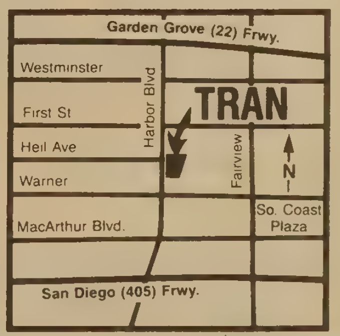

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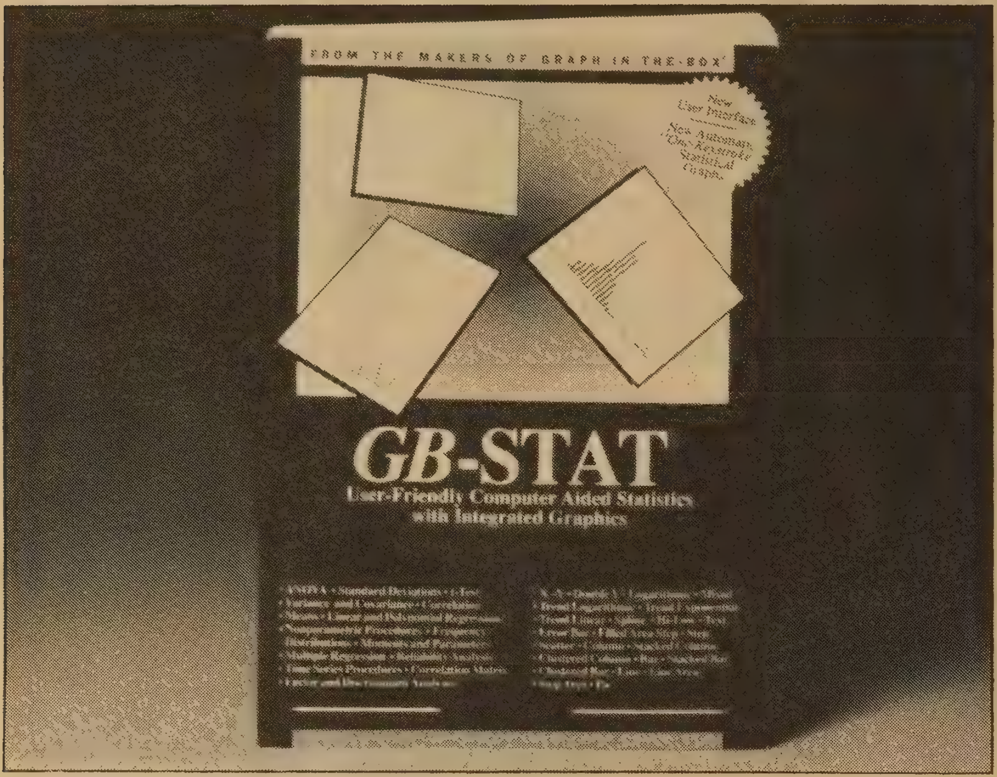
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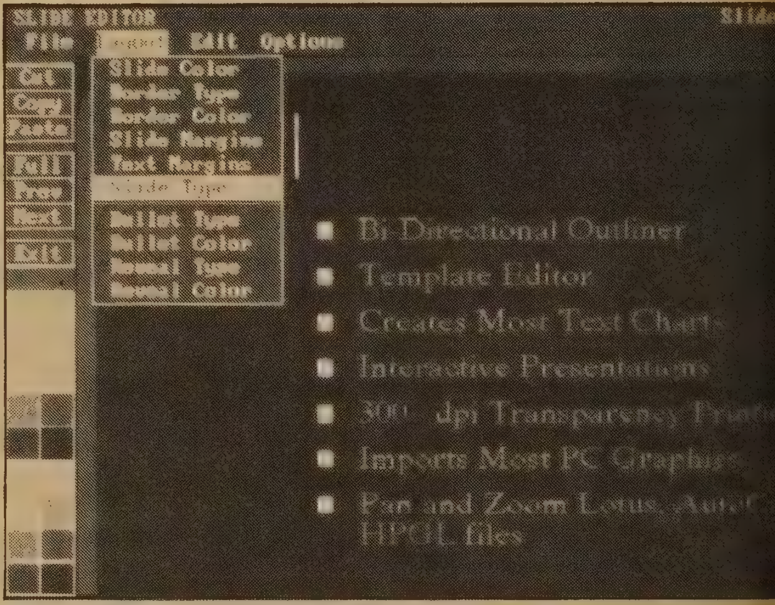
## HotShot Presents An Interactive Graphics Package

Symsoft Corporation has introduced *HotShot Presents*, the first PC presentation graphics software optimized for interactive presentation on projection systems, including video and LCD projection panels. In addition, *HotShot Presents* can be used for presentations with laptop computers, overhead projectors, and 35 mm slide projectors. This new application offers Mac-like features, versatility, and ease of use for a PC presentation graphics package. Its features include an integrated bi-directional outliner, template creation, interactive show manipulation, zoom and pan capability, and import and capture features for most kinds of graphics. The simplified Mac-like interface is compartmentalized into six basic functions: edit outline, edit slide, edit template, edit show, run, and print. *HotShot Presents* offers the first-time user the ease of creating simple, professional presentations with a short start-up time, while offering advanced users the capabilities to create more sophisticated presentations. ($349) Symsoft Corporation, 444 First Street, Los Altos, CA 94022. (415)941-1552.



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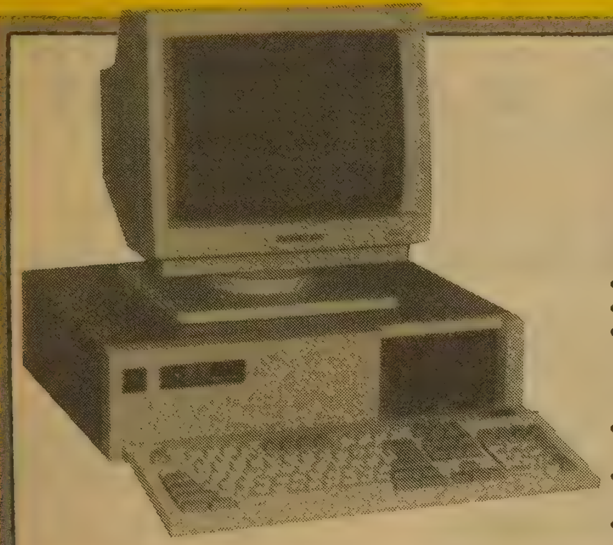

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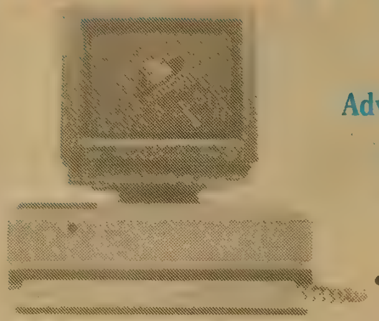

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- 101 key enhanced keyboard
- Phoenix Bios
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- User manual and set up disk

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# NEWS
## AND ANALYSIS

BY PAUL HOFFMAN

### IN THE NEWS . . .

Apple's New System Software ........................22

IBM's New Machines ........................24

Safer Solvent From Japan ........................28

More Lawyers In The News ........................30

Silicon Graphics Iris Upgrade ........................32

*Paul Hoffman is a freelance writer who has written five books about computers.*

# Apple Previews System 7, Safer Solvent From Japan, New IBM Machines

## Apple Previews System 7

Apple struck back at the rumor mill by showing the developers and the press what it expects the next generation of Macintosh operating system will look like. The move is fairly gutsy for Apple, since they readily admit that the operating system won't be available for about a year and, if this is like other releases of their operating system, they will probably be late even with that deadline.

While Apple's preview gave the press something to talk about for a year, it also gives Apple's competitors a year to improve their products to match the features that Apple says will come in the new system. Apple has determined, however, that companies like Microsoft move too slowly to take advantage of this public knowledge and that it therefore had little to lose by previewing the features so far in advance.

The enhancements in Version 7, as Apple so picturesquely calls the new operating system, are wide-ranging and novel. Many add new capabilities, which can be used by applications developers, but the more important ones are features that make the Macintosh even easier to use. Although most people will agree that the Mac's operating system is significantly easier to learn and use than its main competitors (MS-DOS, Microsoft *Windows*, and OS/2), there are still many pitfalls for the average user. Version 7 attacks many of those faults by making established features such as fonts easier to handle. Apple hopes to increase the distance between it and its competitors with these new features, and hopes that the advance publicity for the changes convinces would-be MS-DOS and OS/2 users to take a closer look at the Macintosh.

The changes in Version 7 will not come without sacrifice, however. Apple says that you will need two megabytes of RAM memory in order to run Version 7. Although the vast majority of Macs sold in the past few years are easily upgradable to two megabytes, few users have done so yet. Apple is banking on the price of RAM memory dropping, which is certainly risky given the increasing amount of Japan-bashing going on in Washington DC lately. Even if RAM prices drop, upgrading your Mac's memory involves opening the Mac, something that Apple has made difficult for most end-users. Unless you have a local dealer you trust, you are unlikely to increase the amount of RAM in your system without a fair amount of trepidation. Apple will probably make this step easier later in the year with rebates, price decreases, or special offers.

Apple says that the new operating system will be compatible with virtually all of the current Macintosh programs and will therefore not cause any disruption during the upgrade process.

The new features, which should be available to developers in six months and users within a year, include:

**InterApplication Communication Architecture**—Programs from different manufacturers will be able to send messages and pass data much more efficiently and without any interaction from the user. This is similar to features that already exist in Microsoft *Windows* and OS/2, but Apple is making this facility work not only between applications running on one Mac, but on applications running on many Macs on a network. For example, a spreadsheet program will be able to use the features in a word processing program to format data, even though the spreadsheet program does not have those features. Currently, programs can only communicate by exporting and importing files on disk and through the Clipboard.

**The enhancements in Version 7, as Apple so picturesquely calls the new operating system, are wide-ranging and novel.**

Apple has taken a giant step forward by allowing programs not only to communicate while they are running but to store instructions for each other and to execute them at a later time. This will help users who do not have high-end Macintoshes, since they may not be able to run all the desired programs at once. The new operating system will also support "live" editing of elements of documents that are created in other programs. For instance, if you create a chart in a spreadsheet program and include it in a word processing document, you can update the chart later in the spreadsheet program and have the changes automatically reflected in the word processing document. Although this feature is available now between certain pairs of programs, Apple is determined to have it become a universal feature and therefore has put it in the operating system.

# NEWS
## AND ANALYSIS

**Virtual Memory for Advanced Macintoshes**—If you own a Mac with virtual memory hardware (that is, any Mac with a 68030 CPU or a 68020 CPU with a 68851 co-processor chip), Version 7 will give you true virtual memory capabilities. Virtual memory is a method for making part of your hard disk seem like RAM memory. If you are willing to sacrifice five megabytes of hard disk space, programs will think that you have added five megabytes of RAM to your system.

Since hard disk space is significantly cheaper than RAM (although also significantly slower), this option will be very popular with users who want to run many programs at once or occasionally want to run a memory-hungry program. Again, this will work with programs even if they were written without knowledge of Version 7. This is one of the features that drives many people to UNIX, which has a very clean implementation of virtual memory, and Apple hopes to draw many would-be UNIX users to the Mac fold by offering this on its entire line of systems.

Along with the virtual memory system, Apple is requiring that all applications work in 32-bit environments (prior systems only worked in 24-bit environments). This allows applications to use more than eight megabytes of memory without going through the programming contortions necessary on systems such as MS-DOS. Apple has been warning developers of this for almost a year, so there will be very few applications that do not work correctly with this new limitation when Version 7 is released.

**Better File System**—One of the worst problems with many applications is that if you move one of the files you are using, you have to find it again when you want to change it. Some applications make you keep your files in one spot and never move them. Version 7 will include the ability for programs to find files by an identification number, not its location on the disk. You will also be able to more easily read and use files from other operating systems such as MS-DOS and UNIX. The new file system will also let programmers get better access to the information stored for the Finder, the Macintosh's user interface for running programs and copying files. Programs (and, of course, users) will be able to search through the files on a large hard disk very quickly, so users will not have to spend so much time remembering where they put files or planning on how to arrange files for the benefit of programs.

**Transparent Database Access**—When Apple bought Network Innovations last year, it did not indicate how it intended to use NI's CL/1 data access language in future products. Apple now says that Version 7 will have CL/1 integrated into the operating system so that database software vendors will have a standard method for accessing data on other systems and so that Macs and PCs on the same network can share databases easily. CL/1 is based on the SQL data model, which has been adopted by most mainframe and minicomputer software vendors, and is appearing in many PC-based applications such as *dBASE IV*. CL/1 can even access non-SQL databases. This should help Apple compete in data-intensive office environments and will make it much easier for Apple developers to connect with non-Macintosh systems. The fact that it comes free with the operating system should be embarrassing to IBM and Microsoft, who charge hefty amounts over the base price of OS/2 for their data handlers.

**The changes in Version 7 will not come without sacrifice, however. Apple says that you will need two megabytes of RAM memory in order to run Version 7.**

**Transparent Communications Access**—Although the demand for a unified communications interface has not been high, Apple decided to create a single system-level package that makes including communications in other packages much easier. The communications toolbox in Version 7 will come with three types of drivers: hardware interface drivers (such as serial lines and modems), file transfer drivers (such as XMODEM and KERMIT), and terminal emulation drivers (such as for VT100s). Other drivers will be sold by third-party developers. The communications toolbox should make communicating with other computers much less confusing and frustrating than it is on almost every known computer system. The toolbox will be configured like other parts of the new Macintosh system: by dragging files into folders (see below). The communications toolbox will be especially welcome to DEC network users who will be able to communicate with their DEC systems over Ethernet just as they would if they dialed into the system over a modem.

**Fonts and Printing**—The announcement that made the biggest waves was that Apple has developed its own technology for scalable fonts, displacing Adobe's PostScript for future printing systems. Apple's new scalable fonts let users print good-looking documents on anything from an ImageWriter to a typesetter and be able to use the same fonts and the same programs. Apple made it clear that it was not abandoning Adobe in the short term; it will probably not be able to completely abandon them in the long term, since the typesetting industry has now switched almost completely to PostScript. Apple's outline fonts work as well on monitors as they do on printers, so that programs such as word processors and desktop publishing packages will not need to have special rules for printing on different devices as they do now with PostScript. Apple will publish the font format openly so that all font manufacturers can produce fonts for it. In fact, almost every major font creator said that it will support the new format at the announcement.

The new fonts come as part of a larger package of printer enhancements. Apple has changed the way that printers will interact with the system, supposedly making it easier to create printer drivers (which are almost impossible to create for the current system). Other improvements include better display of characters on the screen, more language-independent features, and better handling of color and gray-scale printers. Apple is finally opening up to non-Apple computers and admitting that one of the most expensive parts of the Macintosh system has been the Apple-produced printers.

## IBM Introduces 80386 "Portable" and 80386SX PS/2s

Re-entering a market that it has repeatedly failed in, IBM announced a "portable" version of its PS/2 Model P70. Weighing more than 20 pounds and costing $7695, the new machine will only be attractive to executives who require lots of power and are willing to pay a premium for the IBM label. Similarly-powered and lighter-weight portables from clone makers cost about 40% less noted many market analysts who expect initial sales of the new machine to be very slow.

Although the display on the new portable is crisp and clear, many portable manufacturers are switching to better displays, and portables with gas-plasma displays are now common. However, the P70 is the only shipping portable computer with MicroChannel Architecture slots. There is a full-size MCA slot and a half-size 16-bit slot, IBM's first. The half slot has many peripheral manufacturers wondering whether this is a trend or just a short-lived aberration.

The new Model 55 SX with a 30 megabyte drive is $3895. This is the first computer IBM has released based on 80386SX, but IBM indicated that there will be many others. The SX chip bridges the gap between the 80286, now the standard for most business systems, and the much faster 80386. The 80386SX chip can run all the software that runs on the 80386 including new multitasking operating environments. IBM noted that the cost of the Model 55 SX is the same as the 80286-based configuration was a year ago and runs about 20% faster.

IBM also announced a convoluted rebate scheme for OS/2. The rebates are on the operating system when purchased with extra megabytes of IBM-label RAM memory needed to run OS/2 or with IBM hard disks. Owners of OS/2 Standard edition get $100 per megabyte purchased and owners of OS/2 Extended Edition get $200 per megabyte. Vendors of OS/2 software also announced rebates on various software. ■

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# NEWS
## AND ANALYSIS

**MIDI and Sound**—Apple will bundle MIDI tools and improved sound capabilities in Version 7. Although the MIDI market is not large, it is certainly a visible one which Apple can milk for good publicity (you know, pictures of rock stars, keyboards, and so on). With MIDI built into the system, the Macintosh will become more of an "entertainment industry" computer. The new system will also allow multichannel sound that can take up as much or as little of the CPU's processing power as you want. One of the main weaknesses of the Mac's sound is that it takes up a great deal of the CPU's resources, especially on 68000-based Macs. The new system lets you allocate the CPU to do other things and get around to the sound only a small amount of the time. The new system will also have sound compression algorithms, which let sounds take up much less space on disk.

**New Finder**—Probably the most immediately noticeable change in Version 7 will be the changes to the Finder. Although these are not of much interest to applications developers, users will notice that they make the Mac much easier to use than the current Finder. For example, there will be no more use for the Font/DA mover: all fonts and desk accessories will be made available simply by dragging them into the appropriate folders. The desk accessory menu will also be able to hold applications so that you do not need to search in folders for commonly-used applications. The Finder will (finally) have help screens built in. Desk accessories will look just like applications: they will have icons on the desktop. Apple's goal is to make the user interface much more consistent and to have fewer special cases in the user's interactions.

Once Version 7 is released, Apple will have by far the most complete and easy-to-use operating system on a common microcomputer. The NeXT machine will be its only rival for system usability. Microsoft *Windows*, even though it has obviously borrowed major concepts from the Macintosh, is still quite unfriendly and unintuitive, due mostly to Microsoft's unwillingness to distance *Windows* too far from MS-DOS. *Presentation Manager* for OS/2 suffers most of the same problems. Yet it is clear from the sales figures that ease of use and ease of learning are not large factors in buying decisions; if they were, the Macintosh would have sold many more systems by now. Thus, Version 7 will probably not have a large sales impact on the Macintosh.

Version 7 might, however, have an impact on what the Macintosh imitators do to make their systems friendlier. For instance, being able to install new fonts simply by dragging them into the correct folder is not only easier than the current method with the Font/DA Mover, it is phenomenally easier than the font installer in *Windows* or in OS/2 *Presentation Manager*. Microsoft has not felt much need to copy all of what Apple does (and Apple's lawsuit has certainly made Microsoft a bit defensive about the parts that it did copy), but at some point they are going to start feeling the heat from Mac users and from users of the new UNIX user interfaces which

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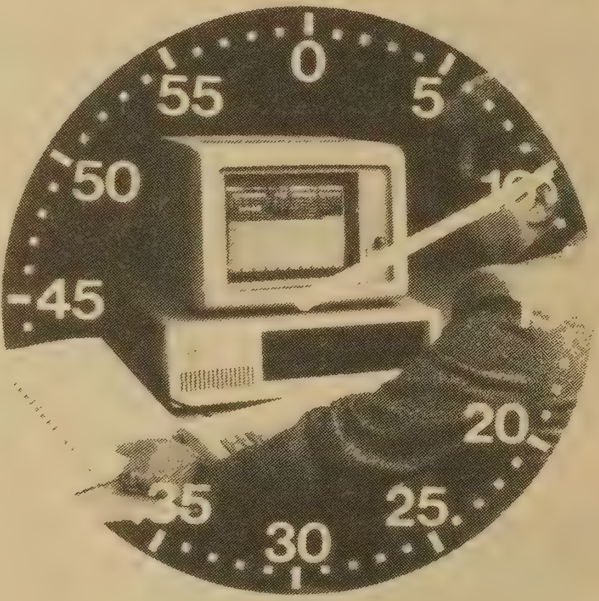

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are becoming available. Apple's early announcement of Version 7 might give some people a time advantage, but Apple does not seem too concerned since anyone emulating the changes will certainly be compared to Apple and not vice verse.

The press will also have to start coping with some new ideas when they discuss the Macintosh. The virtual memory system is much more natural in the Mac than it is under OS/2 due to the lack of segmented memory.

Since Apple is bundling all the new features in the operating system instead of charging for them like IBM, the press will have to be careful when discussing what is part of the operating system versus what is available at extra cost. This distinction is another major (but often unrecognized) part of ease of use. All too often users assume that they can do something and discover that they can't because they were confused about what came with their system and what was available at extra cost. IBM is one of the major perpetrators of this confusion, being the first microcomputer company to sell computers where you had to buy the operating system separately from the hardware. With OS/2 costing a significant percentage of the price of the hardware on which it runs, more and more users will become distressed when they find that it doesn't contain the features that the press is comparing to what comes free in the Macintosh operating system. This may cause Microsoft to bundle more into OS/2 and MS-DOS, but this isn't to be expected any time soon.

## Japanese Manufacturer Develops Safer Solvent

Daikin Industries Ltd, a Japanese air conditioner maker based in Osaka, has introduced a new chemical to replace CFC-113, a common solvent in the computer industry. CFC-113 has been widely blamed for the erosion of the ozone layer covering the earth. Daikin's new solvent, pentafluoropropylalcohol, has similar chemical properties to CFC-113 and will therefore be easier to substitute for CFC-113. It is also does not burn and is considered to be non-toxic.

CFC-113 is used throughout the computer industry to remove dirt and solder flux from components, and an estimated 20% of the CFC-113 released into the atmosphere is from the electronics industry. Most of the rest of the CFC-113 that is released comes from refrigerators and air conditioners, the field that Daikin is in. (Many news reports mistakenly called Daikin a chemical company, even though only 15% of its 1988 revenue came from chemicals.)

Daikin enters an increasingly-crowded market for CFC-113 replacements. The basic problem with CFC-113 is that it remains stable as it rises in the atmosphere until it reaches the ozone layer, where it combines with ozone to create other compounds. Many other Japanese and American companies are beginning to introduce solvents that have extra

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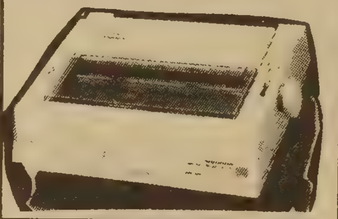

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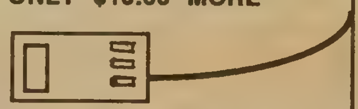

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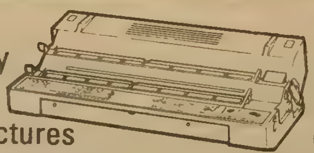

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# NEWS
## AND ANALYSIS

hydrogen atoms that let the chemicals break down at lower altitudes, although it is not clear whether this will have a significant effect. The Daikin product has no chlorine atoms, but atmospheric scientists disagree on whether fluorine atoms will be much better than chlorine. Since Daikin has just begun producing the solvent, its cost is very high relative to other CFC-113 replacements.

Daikin developed the solvent for its own equipment and realized the potential for worldwide use. Sumitomo companies own over 20% of Daikin and can be expected to help finance the development of less expensive manufacturing processes for the new solvent. Currently, Daikin only exports 11% of its goods, but this can be expected to rise significantly if it licenses the manufacturing technology for the solvent to American and European manufacturers.

### If It Ain't The Copyrights, It's The Patents: More Lawyers In The News

Look-and-feel had a slow month but hardware and software patents have taken up the slack. Spring is the season for computer law meetings and maybe they needed something to talk about.

•In a move that acknowledges the role of Texas Instruments in establishing the dynamic RAM market, Micron Technologies, the only other US DRAM manufacturer, has paid TI $38 million and agreed to pay ongoing royalties on both DRAM and any semiconductors encased in plastic. The settlement brings to a close TI's long-standing battle with other DRAM manufacturers over patents that it received in the early days of the DRAM industry. TI had previously gotten large settlements from many Japanese and Korean DRAM manufacturers. Micron Technologies is the only manufacturer to make DRAM in this country (TI manufactures them in Malaysia and other Asian countries) and has drawn many of TI's employees when TI was forced into layoffs due to problems in other parts of the company. As part of the settlement, TI also got rights to many of Micron Technologies' patents.

•Tandy's recent purchase of GRiD should keep a few Tandy lawyers busy. Chief Executive John Roach now claims that GRiD holds a few patents that may relate to most of the portable computers on the market. Refusing to go into detail, Tandy asserts that it holds patents on portables that have a screen that folds down over the keyboard. This design has been adopted by the vast majority of laptops as a method of saving space. The fact that Tandy would not elaborate has caused many of their competitors to accuse them of trying to confuse the market without any supporting evidence. Tandy and GRiD have yet to approach other portable manufacturers with specific requests for royalties, and many computer lawyers are skeptical that they could at this late date.

•Quarterdeck, makers of the popular *DESQview* multitasking operating environment, have received a patent that covers a method for displaying information within windows capable of overlapping on

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a video display. All major competitors of Quarterdeck have since claimed that their products do not infringe on the patent, but Quarterdeck disagrees and says that it is currently asking some manufacturers for royalties.

When the patent was first announced, some industry commentators speculated that it covered everything from OS/2 *Presentation Manager* to *X Windows*, but Quarterdeck quickly said that the patent was not all that broad. However, it is likely that the patent will cover the common methods some companies use to add multi-tasking to MS-DOS, and possibly even to parts of character-based OS/2. Quarterdeck is assuring the industry that it has no intention of using the patent to shut down competitors, but does intend to make some money off of it.

•IBM's long-standing patent on RAM memory access, commonly called the Christiansen patent after the primary designer named in the patent, may restrict makers of EISA if they don't settle up with IBM before producing machines. The patent covers the way that memory and peripheral devices communicate through the bus. IBM has already made deals with Wyse, Samsung, and Daewoo, but major manufacturers such as Compaq, AST, and Zenith have so far not made any arrangements. IBM is charging 1% of the sales price of every PC sold for use of the patented technology. The EISA bus standard competes with IBM's MCA bus standard for peripherals, and many manufacturers are betting a fair amount of their company's futures on its success. Some EISA manufacturers say that the Christiansen patent does not cover the EISA bus, but others are being much more cautious and are negotiating with IBM in case. IBM has already stated publicly its belief that the patent covers EISA machines, which indicates that they will probably take legal moves against any EISA manufacturer who has not licensed the Christiansen patent when the machines come out. Copies of the Christiansen patent are available for $50 from MicroDesign Resources, publishers of the *Microprocessor Report*, at (415)494-2677.

## Silicon Graphics Beefs Up Personal Iris Graphics With Full Color Upgrade

Not content to sit on its laurels, Silicon Graphics announced a significant upgrade to its popular Personal Iris graphics workstation. The Full Color Upgrade takes the standard 256-color system to a full 16.7 million colors with overlay and window color panes. This makes the workstation able to display extremely high resolution color with photorealistic accuracy. The standard Personal Iris workstation costs $16,000, and the Full Color upgrade costs an additional $6000.

Silicon Graphics expects the upgrade to be popular in the video production and simulation markets. The upgrade can be installed by the user and will allow present applications to use all the new colors automatically. ■

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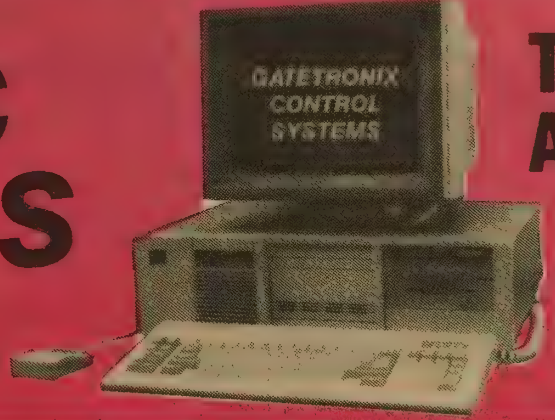

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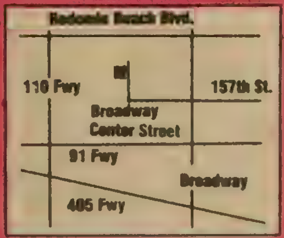

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# Decent Education: A Realizable Fantasy?

"I'm mad as hell" (you should be, too), and we *must* not take it any more!

## San Jose Outrage

On April 25th, about 80% of San Jose's "teachers" suddenly refused to enter their classrooms—after unsuspecting students, including young children, were in class and their unwarned parents were at work. Earlier, a surprise "sickout" similarly victimized parents and children without warning.

Unlike responsible union action—which minimizes harm to innocent bystanders—this compares to pilots suddenly refusing to show up after unwarned passengers board scheduled flights and engines are running. It's like surgeons never appearing for serious-but-optional surgery that they scheduled, after patients are prepped and on the operating table.

As of this writing, the San Jose teachers' union has refused offers from their District, independent mediators, and independent fact-finders: A 4.32% increase, plus up to $3,000 in medical benefits, plus another $900 or so in other benefits. That would pay starting teachers $22,821 and top-step teachers with a Master's degree $43,265, and allow 10 cumulative days/year for illness or "personal necessity" (the March sickout?).

All for working 183 days per year, at the worksite from about 8 am to about 4 pm.

The union demanded 7% and full benefits costs, even if they exceed $3,900/year.

## Los Angeles Ransom

The LA teachers' union even more outrageously victimized innocent students. It urged members to conceal roll books, refuse to issue or record final grades, and refuse to give CTBS and advanced placement exams needed by graduating(?) seniors for college entrance, scholarships, etc.

As of May 12th, the union refused a three-year, 21.5% salary package that would guarantee $26,714-$49,021 in 1989 and $28,427-$52,030 a year from now—plus 100% of medical, surgical, dental, vision-care, and life insurance.

All for mostly self-directed work for less than 9--1/2 months.

In mid-May, L.A. teachers went on strike.

## How's This Compare To Computer Folks?

Recently reported 1988 Labor Statistics for the San Jose metro area show computer operators making about $24,310, engineers averaging $42,296, systems analysts making $43,186 and top engineers drawing $74,776.

*Copyright © 1989 by Jim Warren. All rights reserved. Jim Warren founded the West Coast Computer Faire, the* Silicon Gulch Gazette *and* InfoWorld *newspapers, Video Initiative, and the DataCast proposal for broadcast-based paperless electronic newspapers utilizing personal computers. He was the founding host of the PBS* Computer Chronicles *series, founding editor of* Dr. Dobb's Journal, *and founding president of the Microcomputer Industry Trade Association.*

But, instead of teachers' 25-45 hour work-week for 175-185 days, most computer pros work 40-60 hours (33%-60% more) for 220-240 days (26%-30% more).

Computer workers generally have much less autonomy than teachers in assignments, designs, work techniques, schedules and work evaluations. Unlike teachers, computer pros can rarely choose whether to work, or just sit around a lounge smokin' and chatting for about an hour every morning or afternoon.

Perhaps most different: Technologists are often promoted if they do well, and usually fired—and fired quickly—if they become nonproductive. In contrast, teacher unions invariably and violently oppose promotion based on teaching excellence. And teachers who are "merely" grossly nonfunctional are usually retained and automatically moved up the salary schedule. They harm their students' education, embarrass their peers, earn disrepute for education, and—by state tenure law—during cutbacks such educational deadwood knock off junior faculty who are highly productive, dynamic, inspiring and energetic.

## But How Else Does This Concern Computing?

If the answer is not obvious, here are some additional tidbits:

At a recent microcomputer workshop for 100 of microcomputing's elite, 3 of the 40-or-so open-forum speakers devoted their entire comments to problems public school education poses for the industry and the national well-being.

Electronics is now the nation's largest manufacturing industry, employing 1.6 million Americans and earning over $340 billion, worldwide—three times more than the US auto industry. It's in vigorous competition with Japan, Inc., and soon with Europe, Inc., and undoubtedly Asia, Inc. Does anyone think we can sustain our national financial and employment well-being with students being bludgeoned as they are in union-District conflicts like these?

Other countries have long school days, long school years, and demanding educational criteria. But our Secretary of Education recently detailed evidence that US education is "stagnating" and educational reform "has lost its momentum": SAT and ACT college entrance scores are declining; high school dropouts have increased to 28.9%. (Would you bother attending school if your teachers might not show up, and you found many spending class time encouraging students to demonstrate for ever-higher teacher salaries?)

School spending of your tax money—after adjustment for inflation—increased 26% from 1982 to 1987, while performance and attendance declined. Teacher unions often publicly demand smaller classes, more prep time, better facilities, and higher salaries—then settle for larger classes, less preparation time, degenerating facilities…and higher salaries.

## Solutions ARE Realizable

First, parents/students must be free to choose—and direct their tax-paid tuition to—teachers and schools from among those teachers who are available and qualified, and from those schools (public and private) that fulfill state requirements for curriculum and economic and ethnic diversity.

Regarding irresponsible walkouts: If you have a Bachelor's degree or higher, volunteer as a substitute teacher if teachers walk out based on demands you feel are unreasonable. Pre-clear this idea with your boss—call it "community responsibility leave." It requires some planning: Take the California Basic Educational Skills Test (CBEST), given statewide several times annually. (Until the mid-'70's, reasonably-qualified substitutes could get emergency certification. However, during a strike, many well-educated parents and professionals helped as substitutes. Thereafter, the legislature mandated the union-supported CBEST requirement, and—surprise!—the law prohibits scheduling special CBEST testing during a strike.)

Regarding teaching excellence: Most—I reiterate, *most*— teachers are reasonably responsible, reasonably dedicated, and do a job that ranks between reasonably good and outstanding. These worthwhile teachers are as much victimized by money-grubbing zealots and faculty deadwood as are their students and the public education system.

Vigorously demand of your legislators that state tenure laws be modified: Minimize the number of steps in teacher salary schedules. Note: For their first 15-25 years, teachers get annual "cost of living" increases *on top of* stepping up their salary schedule.

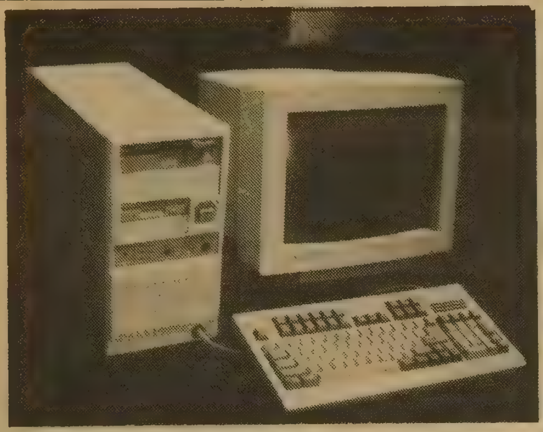
For retention, as well as for promotion, require rigorous performance evaluation—involving in-depth peer review, input from current and former parents/students, and some administrator input. It should be far more than a preannounced classroom visit/observation, once every two or three years, that is too often the only evaluation basis permitted by union contract.

Teachers who want a faculty-style union to negotiate their job security, working conditions salaries, and benefits should and do have every right, make that choice. However, those who choose to function as factory workers should not also have the tenure protection designed for educational professionals and made law when teachers had no other job security.

If legislators can't override protectionist lobbyists, then we must do it—now!—via ballot initiative. At issue is nothing less than our national future and well-being.

## Back To The Future

Fear not. Future columns will again address proposals that are much more technologically interesting—and much less consequential. Send your ideas to Jim Warren, Realizable Fantasies, 345 Swett Road, Woodside, CA 94062. Published proposals will be attributed unless their authors request anonymity. ■



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GUEST EDITORIAL• BY ROBERT A. COWAN

# A Headhunter Asks: Are Sacred Cows Keeping Your Firm From Hiring Or Retaining Quality Professionals?

A medium-sized software manufacturer in Fremont was experiencing tremendous turnover problems in its product development department. Topnotch programmers, drawn by the firm's reputation as an industry innovator, would eagerly join the company's staff; yet, within six months, they'd be gone.

Since the company prided itself on treating its employees like family, senior executives were surprised that they couldn't keep competent programmers. It turned out that the deputy director of development, who had been with the company since its inception, was a technological wizard but an abysmal manager with a severe lack of people skills. Out of a sense of loyalty, the company resisted firing him; as one departing programmer said, "It'll take an act of Congress to get rid of this guy."

In another case, a small personal computer manufacturer needed a regional sales manager for its Los Angeles office, but could only afford to pay $50,000. The position had been vacant for over eight months, at great loss of potential revenue, yet no one would challenge the company's policies and loosen the purse strings so they could get the most qualified person for the job. Fortunately, a $4,000 hiring bonus was arranged to circumvent the position's salary cap, and the company agreed to pay for the costs of relocating the most promising candidate from San Diego. But the firm came perilously close to losing the applicant.

**Remember that if a candidate looks good to you, he or she is probably being courted by other companies as well, and—if you wait too long—may accept an offer elsewhere.**

What these two stories have in common is that they both illustrate how sacred cows—those seemingly inviolate corporate policies or sacrosanct personnel—can keep firms in the computer field from attracting or retaining top-notch professionals. In today's tight labor market, however, CEOs can't risk nurturing sacred cows in their corporate culture.

Of course, most senior managers in the computer field, whether they work for a small entrepreneurial concern or a manufacturing behemoth, don't believe there are any "carved-in-granite" rules or "untouchable" employees in their organization. However, my experience tells me otherwise, and this collective myopia is costly in terms of lowered productivity and morale, not to mention the expense of recruiting.

These sacred cows may be defended as corporate policy, but often they are merely a convenient way for department heads to avoid assuming responsibility for inefficient or counterproductive procedures. During the hiring process, these "written-in-stone" rules take the form of insisting that a job prospect have "the IBM look," inflexible compensation and benefits packages, and adhering to an unnecessarily long selection procedure. Within the corporate culture, the most glaring sacred cows are technically proficient supervisors who aren't capable of managing people, technology that "ain't broke," and outmoded ways of doing business because "we've always done it that way."

I've noticed on numerous occasions that employers feel safer hiring applicants who have the "right" corporate look. Don't make appearance more important than substance. You may inadvertently dismiss an otherwise outstanding applicant simply because he—or she—doesn't conform to your idea of how a corporate manager should look. A more reasonable approach would be to outline the duties to be performed, and then find someone who can handle them.

Another corporate sacred cow is The Hiring Committee. Promising candidates end up being screened by an endless round of committee members because no one is willing to take responsibility for making the final choice. Talented professionals, meanwhile, may become so disenchanted by the delays that they wouldn't consider joining your staff. Remember, too, that if a candidate looks good to you, he or she is probably being courted by other companies as well, and—if you wait too long—may accept an offer elsewhere.

That's why it's in your interest to streamline the hiring procedure as much as possible. A more effective method is to eliminate the number of bureaucratic levels that must be waded through before a selection is made, and to give your managers more decision-making power. After all, these candidates will be working directly under *them*, not you.

It's also worth noting that the industry has undergone vast changes in the past decade as computers have become accepted in the workplace. But many companies still cling to outmoded ways of doing business that are holdovers from the days when they were struggling start-ups run by mavericks.

For example, are your salespeople responsible for installation? This policy probably made a lot of sense years ago when members of your staff did double duty trying to get the company off the ground. But today, why not have support people doing this task so your salespeople can get back in front of prospects instead of wielding a screwdriver?

A corollary to this is the "if it ain't broke, don't fix it" mentality that pervades the industry. Many companies insist on using systems that may be outdated simply because they still do the job relatively well. But in the computer field, if you're not constantly evolving, you're falling behind. No one feels this pressure more keenly than your technical people. They know that if they don't keep their skills current, eventually they'll be unemployable. If your company doesn't keep pace with technological changes, they'll switch to one that does.

Another sacred cow in the computer industry—especially for firms involved in product development—is the techy in a managerial position. Again, this practice is a holdover from the company's startup days when the key employees were primarily technical wizards. A successful manager, however, must have the ability to motivate, influence, and communicate with people, and to create a working environment in which employees are inspired to do their best work.

**Don't make appearance more important than substance. You may inadvertently dismiss an otherwise outstanding applicant simply because he—or she—doesn't conform to your idea of how a corporate manager should look. A more reasonable approach would be to outline the duties to be performed, and then find someone who can handle them.**

Unfortunately, these qualities are often lacking in technically-oriented supervisors, and their departments frequently have high turnover rates. Computer companies need to recognize that the field has changed, and that management people must be good communicators who can work effectively with people—technical skills must be enhanced through development of management technique.

Remember, a company is only as good as the people who work for it. The difference between success and failure in today's competitive business climate may hinge upon the quality of your staff. That's why it's important to root out the sacred cows in your corporate culture that may be preventing you from recruiting or retaining topnotch professionals. ■

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*Robert Cowan is President of Search West, a contingency search firm based in Los Angeles. The firm has several recruiters among its 150-member staff who specialize in searches for the computer industry. Mr. Cowan can be reached at (213)203-9797.*

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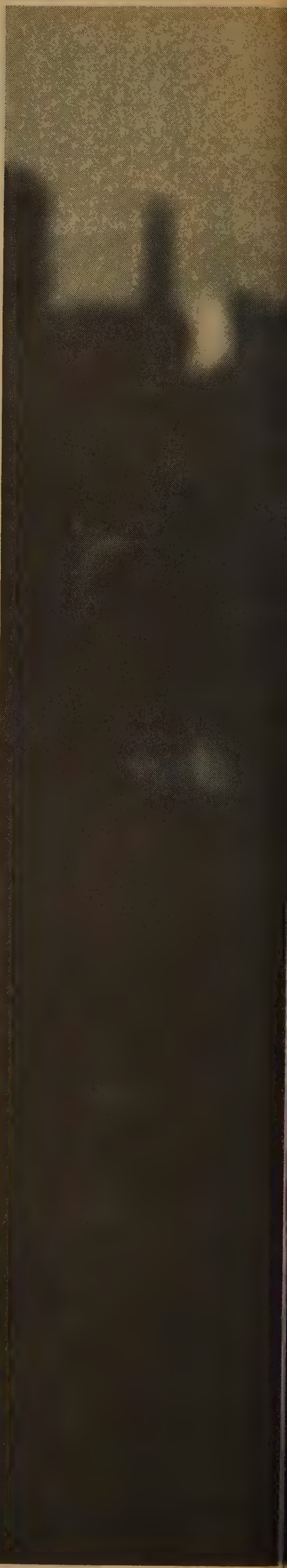
# The Inside Story



## An Interview With Venture Capitalist Frank Caufield

**By Dennis Erokan**
**and Mary Eisenhart**

PHOTOS: JIM MARSHALL

Some say that Venture Capital is the lifeblood of the high tech industry. Others, using less friendly epithets like Vulture Capital, characterize it as more of a parasite on entrepreneurial activity.

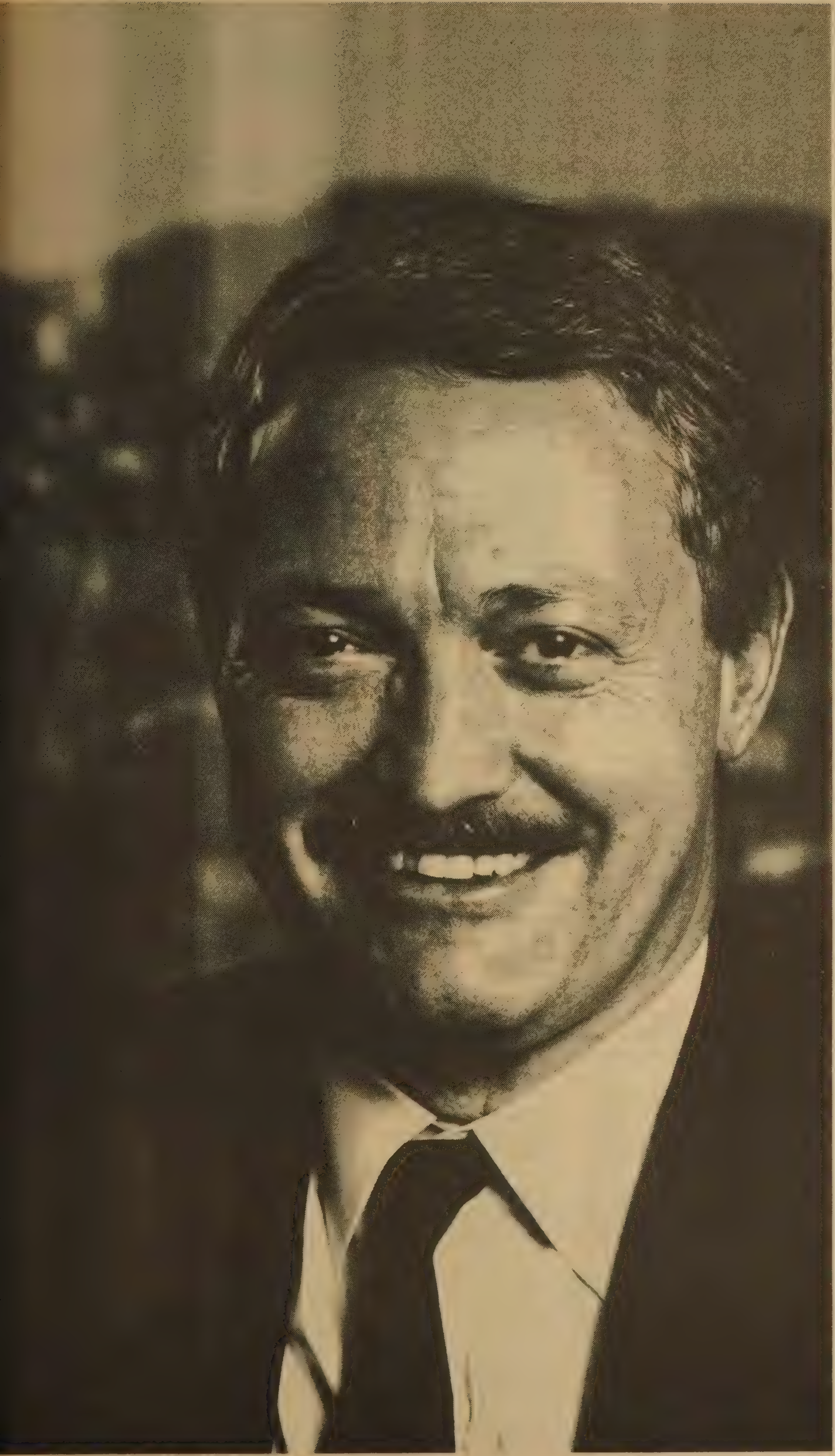
There's a certain amount of credibility to both sides of the argument. On the one hand, venture capital—i.e. money invested by one or more firms in an idea-rich and cash-poor enterprise, usually in return for a certain percentage of stock in the company or a similar arrangement—enabled startup companies like Apple Computer to exist, and clearly create a win-win situation for all concerned.

On the other hand, you don't have to talk to too many people in the industry before you start hearing the horror stories. Venture capitalists who take unfair advantage of naive techs. Venture capitalists ousting company founders who fail to perform to expectations. Venture capitalists providing inadequate financing so that promising products die before they reach the market. Venture capitalists with catastrophic and far-reaching lack of judgment.

Frank Caufield is a senior partner of Kleiner Perkins Caufield & Byers, an illustrious and phenomenally successful venture capital firm with offices in San Francisco and Palo Alto. KPCB specializes in high-tech investments, and was instrumental in the startups of (to name only a few of dozens) Ansa, Businessland, Compaq, Electronic Arts, Lotus, MIPS, Palantir, Radius, Symantec, and Sun Microsystems. (It's also a strong presence in the biotechnology field, having helped found, for instance, Genentech.)

KPCB continues to invest in the future. Dynabook, one of its companies, is about to ship its first product, also called Dynabook, an ultra-light handheld PC compatible computer. Farther out on the horizon are products from companies like Prisma, currently designing a new generation of technical computers.

One of KPCB's most noteworthy characteristics is its application of the Japanese *zaibatsu* concept of creative network-



ing among its member companies—a practice that gains additional strength when reinforced by the firm's policy of not backing competitors in a particular market. According to KPCB's informational literature, "KPCB portfolio companies are autonomous, independent entities. They often sell products to each other, and collaboration can go beyond ordinary vendor/customer transactions. The point of the Network is to encourage the independent ventures to accelerate growth and reduce risk while acting in their self-interest.

"There are numerous examples of the Network at work: the launching of *Lotus 1-2-3* and Compaq Computers by Businessland; Sun and Cypress co-developing SPARC processors; and Genentech and Caremark cooperating in the marketing of Protropin (human growth hormone)."

Our visit with Caufield at the San Francisco headquarters of KPCB led to some candid discussion of the venture capital business, its rewards, and pitfalls, as well as the challenges ahead.

**In your view, what's a venture capitalist?**

Our business is basically raising money. I'll describe the process.

On the one hand, we raise money every three or four years, symbolically put it in the bank, although in some cases the investors keep it and we draw it down periodically. And then the core of our activity is that we go in and try to find new startup high-tech technology companies, at the very earliest stages, in information sciences and life sciences. If we can't find it, we start it ourselves, which we call incubating it.

Then we work with those companies real closely over a period of anywhere from two to ten years, and in the best of cases, take them public or secondarily, perhaps, merge them, and have them be acquired by another company. Or if not, they disappear into the ozone, and we go on.

**And the return on the investment is over the entire pool of money, rather than on any individual company?**

Yes. We just raised our fifth fund. The first one was 1972 (as Kleiner and Perkins), then '78, '80, late '82, early '86, and early '89 (as KPCB). The return that we would report would be on each of those.

**One question I get asked by people who would like to connect with a venture capitalist is "What does their plan have to do for you?" What are the performance benchmarks that people are looking for in the venture capital field?**

Well, I think if you asked practically any venture capitalist, they'd give you pretty much the same answer. It's not in identifying the factors; everybody knows that the same things are important. It's how you judge whether or not a venture meets this, how you assign, under different circumstances, different weights to things.

First you look for a distinct product, a competitive product, a technical innovation. In the old phrase, a better mousetrap. Then you look to sell that into a large or rapidly-growing market. Third, you look for good management. I think everyone would give you those factors, and they're rarely, if ever, all present in a given situation. You have to either strengthen the management team, or the market's a big question, or it's unclear that this technological innovation can work. But it's how you assess their presence or absence; under some circumstances the presence of extraordinary technology can compensate for an immature market, or a market that's going to be slow to grow, or a management team that's inexperienced.

But that's what everybody does. We focus on another issue that I think most firms don't: we look for an investment and structure the way things are going to work so the biggest risk happens as early as possible. Often this means opting for technical risk over market risk. That is, I'd like to know that if this guy can make this thing, it's good enough so that it really ought to sell. And the reason for it is, first, you can usually prove a technical concept quicker than you can a market. It just takes fewer dollars—it's the first thing we do. And then if it works you've got to gear up for large-scale manufacturing. Then you've got to gear up for large-scale marketing. And if your question is in the marketplace—will the dogs eat the dog food?—by that time you've spent all your initial engineering dollars, then you've also had to raise more money for manufacturing, more money for marketing. You have a big overhead, cash is being burned at the rate of half a million a month, and you're just waiting to see if the market is going to take the product—and there's always reason to think it will, there's always somebody about to order, or somebody really likes it.

So that's an agonizing situation to be in, where you have to fund something at great expense, because you don't want to pull the plug—so it's better, if you can, to do marketing surveys, or a small-scale rollout of the product, something to get the bulk of your risk taken care of quickly on the smallest number of dollars, so if you've got to cut it off you've lost one million, not five million.

**Can you give us a real-life story to illustrate that?**

We invested in a disk drive company—it's really the best example, but it was so long ago I've forgotten the company's name—we and some other investors put in something in the neighborhood of $3 1/2 million, and nine months later, it just didn't work.

**The drive didn't work?**

The drive didn't work. And there's nothing to do but go home. Now if the drive had worked, and you'd ramped up manufacturing, and then it turned out that the market required something else, then you would have lost many times more than that.

That happens to a greater or lesser extent all the time. And sometimes it's not so black and white—it works or it doesn't—but sometimes the specs that the unit can achieve, in terms of throughput, in terms of megahertz or whatever it is, isn't just quite enough so it meets a market demand. Or it's a great product, it just costs five times more than the market will pay. It often is not black or white, it's just that the product isn't quite what you'd hoped, and therefore the market opportunity isn't there, or the market opportunity is much smaller, and what you're going to have to do is try to indicate or prove that there's some value, and try to sell it.

**If the drive had worked, what might you have spent over the first $3 1/2 million, for the manufacturing and marketing?**

Oh, I'd say at least twice as much. Two to three times as much, I think. The kind of companies you tend to be wary of are those which have very long product development cycles, followed by very long sales cycles. This is typical of the telecommunications industry, where you have a very sophisticated piece of gear and it takes you 2 1/2 years. And once you get it, then you've got to play around with the Bell Operating Companies for ages, one, two, three years, and then they give you small orders. So in those kinds of situations, you try to get a broad investor base, so that when you're looking around and they need another $5 million to get through the next six months until the telephone company cuts the order, you're not the only one there.

**I would have thought that return on your investment would have been one of your rules, and you didn't mention it.**

Well, if the other things are right, that'll happen. Sometimes when you tell entrepreneurs "Build a company, you'll get rich"—if you focus on getting rich, you're not going to build a company. So clearly, in your initial negotiations with the entrepreneur, you have to reach something that's reasonable.

The parameters are reasonably narrow. Things have changed in the last ten years, of course, but a normal first round will be $3 million. Plus or minus a half-million, that'll account for probably close to half of the first rounds.

What does that get you? Basically, if all you're talking about is three people and their idea, it probably won't get you less than half, and probably won't get you more than 65%. Those parameters used to be wider, but basically that's what the deal is, and if it's really attractive, it'll be on the lower end of that range.

I think there's more pricing variability in the second round, when most typically you will have developed the product, you'll have proven the principle or you have something that either you think works, or even better, has been in the hands of a customer who's been tinkering with it and can give the second-round

**"We look for an investment and structure the way things are going to work so the biggest risk happens as early as possible. Often this means opting for technical risk over market risk."**

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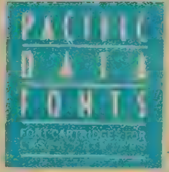

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investor some kind of comfort—"Yeah, it works, and yeah, we'd probably like to buy some." If the first price was $1 a share, those second rounds are anywhere from $1.50 to $4—in fairly heady times, a triple was the goal, but between two and three times is fairly standard. And then the third round is where you have what you might call expansion capital—you've already got some manufacturing and marketing, but now you're really rolling out, and you can see a public offering out there in the distance somewhere. Those are quite variable. What you're doing is figuring what this company is going to go public for, in a year or 18 months, and maybe buying it for a half or a third that. So the first couple of rounds, you're pricing it looking at a rear-view mirror, and the third ones you're looking at "What can this go public for, and what am I likely to get?"

**So the goal for the final round is hoping you can either triple or double your money?**

In a "third round." Now, that's not our particular market. We rarely do that, unless it's a company that we were a first round investor in. We feel that, one, you make more money, and two, it's our particular skill set and orientation to invest in the first round.

**So in general you're not interested in coming in on the third round of companies you didn't invest in on the first round?**

That's right. There could be some strategic reason—that a company is so attractively positioned in an important area of technology—that we do it for that reason, but that would be about it. And then it would be in turn so that we could leverage that technology and a relationship with other companies in our portfolio. If there were some particular kind of semiconductor technology that we felt had tremendous applicability toward a wide range of computer hardware, we might come in on a third round. To be able to help our other companies.

**So what form does that help take—you get in on the management structure?**

No, we have what we call our *zaibatsu*, which is a network of relationships between companies that we've invested in. We've worked that pretty hard, and there's any number of examples where well beyond normal vendor-supplier relationships, these companies have helped each other develop.

**So Sun might talk to one set of people, and Sybase might talk to another one.**

Exactly. Metaphor and Sybase is an example.

**How did that work?**

Well, I went to West Point (laughs). Enough said. The president of Sybase [Mark Hoffman] also did, and misery makes—well, one, it loves company, but two, it kind of makes bonds of friendship. That investment was shown to me by a third West Pointer, who's a mutual friend. They were only raising a million and a half dollars, they'd already raised a million, there was only half a million left, and they wanted someone from this firm to go on their board.

Frankly, for half a million dollars, to go on a board wasn't really economical. At that point we had a lot of money under management, and if we went on a board for every half-million-dollar investment, we'd be spread too thin.

So, to make a long story short, they had this relationship with Metaphor. We were a large investor in Metaphor, and Dave Liddle, who was the cofounder of Metaphor, volunteered to go on the Sybase board, both for his own business reasons, but also so that he would represent us, given that he was known to us. That's the way we try to do it—that was unusually neat, and it worked out serendipitously very well. But we sort of like to leverage our time, so Dave has been representing us on the board there for years.

**Do you have a preference, when somebody comes to you with a business plan, whether that person's a marketing person or a programmer? What type of background that person has?**

Well, given the nature of our business, the chances are he's going to be a technical person. He was in the lab and had some kind of an idea to do something better. The chances are better than even that he's a technical person.

Ultimately the talent that correlates most highly with success is a marketing-oriented chief executive, because once you can make it, the chances are overwhelming that you can manufacture it, and then the battle's won or lost in the marketplace. Often the first battle is won or lost in the marketplace, and then the second battle is lost, or the third battle is lost. You have numerous examples of companies that have an innovation, have a lot of focus, get to market early, have a good success with their first product—Alliant was an example—then the second product isn't there. If you're lucky, you've got the resources—did you raise enough money when things were going well to fund you through a downtime to where you can pick it up again?

Marketing orientation on the part of the chief executive probably parlays more strongly with success than any other thing. So you'd like to have that. Or when you see a technical person—a lot of technical people have a real Elmer Gantry missionary flair about selling their technology, and they can be really effective at it. They're sort of surprised that they can do it, but they end up having a real flair for it. Other times, you just have to make sure you hire a strong marketing person. We're half in the headhunting business. It's probably the single biggest and most important service we provide, recruitment, as well as urging companies to hire—to raise their sights much higher than they perhaps otherwise would, to get good people. Because like so many things, you have to raise your sights so high that you can almost not get that person, as opposed to bottom-fishing.

**Getting back to the issue of the marketing-oriented CEO, your colleague Mr. McKenna mentions in his book [*Who's Afraid Of Big Blue?*] that part of IBM's undoing, the thing that made them unable to deal with rapid changes in the marketplace, was that every president they ever had came from the sales department, and there wasn't a technical person in the bunch.**

Of course, historically, that's been IBM's main strength, a tremendous marketing strength. It's like most people—their best qualities and their worst qualities are typically mirror images or other sides of the same coin.

Having a brilliant marketing strategy and a tremendously effective sales force has been IBM's saving grace for many years, because their products have always been...*fine.* Not wonderful, but their marketing saved them. And in the end, particularly when products get to be commodities, it's how close you are to your customers, how well you satisfy their requirements, a really almost personal relationship that's established between vendors and customers.

I suspect that in addition to a lack of technically-oriented people at the

**"Ultimately the talent that correlates most highly with success is a marketing-oriented chief executive, because once you can make the product, the chances are overwhelming that you can manufacture it, and then the battle's won or lost in the marketplace."**

top, it's that big companies can only move so fast, and they're also tied into certain kinds of standards and compatibility requirements of their existing customer base. And if you're Lotus and you're starting from scratch, you don't have to do that.

**What he's getting into, I think, is the contrast between turf wars over existing market share and being truly market-driven in the sense of being genuinely responsive to your customers instead of telling them what to do.**

Well, when Tandem was started, I think its principal barrier to entry was that if someone wanted to design a computer to be as efficient as Tandem in that fault-tolerant kind of application, they would have had to use a system architecture and software that was not compatible with their existing system. A startup could do it, but IBM or DEC would have to have designed a new generation of computer, from scratch, that was not compatible with anything their customers had.

And so basically they were kept out of that market for years, because if they're going to go to all that trouble, they would prefer to use those resources to develop a product that they could sell to their customer base and that doesn't infuriate all their customers who wonder why they're going to have to rewrite all their software. So I think the tyranny of previous product history probably hurt IBM.

If you go over the major growth areas of computers, the common denominator is largely that they were done by startups and venture capital-funded. The personal computer business was started by Apple. The supercomputer business, Cray. Minicomputers by Digital Equipment. PC software from VisiCorp and then Lotus.

**Was Visicorp funded with venture capital?**

Actually, they raised money—they were in our offices here, they raised money at, I think, a $75 million pre-financing valuation.

We were a founding investor in Lotus, but we luckily managed to skip Visicorp. (laughs) They were here, but we decided not to invest.

There are a lot of different kinds of risks in a startup, but one of the kinds of risks there usually isn't is what I'll call financing risks; there's just relatively narrow parameters of what you pay. But once you're paying $75 million for something, in addition to every other kind of risk—risk in the technology, risk in the market—you've got a financial risk, i.e. that you just paid too much. That kind of risk is generally absent, or minimized way early in the process.

**So if you spend 10% too much on a $3 million deal, you haven't lost that much, but on a $75 million deal...**

Yeah, except that usually in a $75 million deal you can be off by $30 million. It's huge.

**Of the companies you've backed, do any of them stand out as a case where you did everything right?**

Well, the ones that went the smoothest are the ones my partners did; I didn't have anything to do with it. (laughs) Everything was a breeze, I just got my certificates in the mail.

But I think there's a period in the early '80s when the personal computer business was moving off, and companies like Compaq and Lotus just moved into that slipstream and did amazingly well. Of course, from the inside it's never pretty. You have this wonderful progression of revenues and earnings and so forth, but inside it's just a mess. It's chaos. You hire somebody, and within three weeks he's got ten people working for him. He barely knows anything, and suddenly he's a supervisor, and it's just madness.

You have to be in an atmosphere that forgives mistakes; that is, if your customers really, really want a product, then they just forgive you if you have a disk drive where the heads always crash, or something like that. In America, unfortunately, our methods of product development are—well, the Japanese design it for reliability and for low-cost manufacture, and test the hell out of it, and by the time they ship it it works. The more common pattern in the United States is that you get sort of a breadboarded pre-prototype pre-production pre-everything, and you just kind of ship it out there, and then you move half your engineering resources to the customer's facility, and then together with his staff, you kind of tweak it down the assembly line.

I think in some ways it may be efficient for rapid time to market, I don't know.

A good example was Quantum Corporation, which is a disk drive company. They're a good example of doing it both ways, because they did it the first way with their 8" disk drive, and they were terrific, and then it was just a mess. But to go in and expect it not to be a mess, you're in the wrong business, you're kidding yourself, or you don't know what you're doing.

But then they had a joint venture with MKE, a Matsushita subsidiary that made some gross percentage of all the world's video cassette recorders. They could see that that business was heading south, and Quantum had set up a subsidiary to develop the Hardcard. They felt, of course, being as that was a consumer product, that price would be extremely important—they had to go in and do it like the Japanese do, and we established this joint venture. They went off someplace in the hinterlands of Japan, where there's nothing but the company town and thousands of miles of assembly line, and there these very talented US engineers learned a lot about engineering discipline. Things that were kind of just sloughed off or worked through or fixed on the fly—I mean, excruciating attention to detail—and by the time that product hit the market, probably nine months later than it would have, we didn't get a return. It was just plug and work.

Subsequent products that their OEM side of the business developed were done with a wholly different level of engineering discipline—simply designed for reliability and designed for low-cost manufacture, and thoroughness in testing before it went out. Quantum had a slip back a couple of years ago, but their product reliability is what's gotten them back into Apple—I think they're their largest supplier of 3 1/2" disk drives, and Apple's the largest OEM purchaser of 3 1/2" disk drives.

**So it takes a certain amount of guts on the engineer's part and the manager's to get the product absolutely right before you ship it.**

Yeah, and in a competitive environment—nowadays when there's twenty 3 1/2" disk companies, and you're the first one, that warm feeling that you get from having your product really perfect is probably not justified when your competitor is out with some other product, beating you to the customer.

In a better world, products would be really ready before they hit a customer, but there's such enormous competition to get to the customer fast, in these enormously short product life-cycle products.

**They're obsolete almost before they ship.**

Or that you're obsoleting your own product—once your product is in beta site, you ought to be obsoleting it in the lab. Which is really sort of discouraging in a way—you're not even sure whether this product is

> **"If you go over the major growth areas of computers, the common denominator is largely that they were done by startups and venture capital-funded. The personal computer business was started by Apple. The supercomputer business, Cray. Minicomputers by Digital Equipment. PC software from VisiCorp and then Lotus."**

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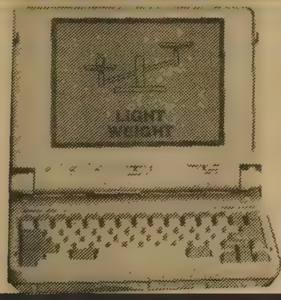

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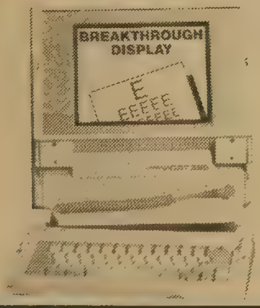

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going to be a success, and you're already having to obsolete it. Because you can be sure that somebody else will.

Usually the way things are upgraded in disk drives is that they're made smaller and cheaper. More advanced software requires more memory, which requires more disk capacity, so you used to have 8" drives about this big that had ten megabytes—that used to be the standard around 1980. And now you've got a 3 1/2" that holds 100.

I think one of the things that you're going to see with this increasing miniaturization is that with few exceptions, if a computer isn't quite portable it's obsolete. I think you're going to see this with the Dynabook, a small, fully-functional totally IBM compatible that you can fit inside your briefcase. It weighs about eight pounds. It should be out soon; we hope to be shipping late May or early June.

**You've talked about competition on the manufacturing level; what about competition at the venture-capitalist level? Are you locked in combat with other venture capital companies, where you're trying to outdo each other on specific products, or in areas of industry?**

Well, clearly the venture capital business is a lot more competitive than it was ten years ago. I think that competition shows itself in two ways, really. First is the obvious way, where you have too much money chasing too few deals, which is going to exert an influence on prices. But as I said, in the startup business the pricing parameter is fairly narrow. So for us it hasn't had a huge impact on the price we pay for investments.

A couple other factors—entrepreneurs, today and over the last five years, have become increasingly sophisticated about the sources of money that they go to. Ten or 15 years ago, an entrepreneur would go get his money; he wouldn't really differentiate between sources, and I think now it's very different, and that most knowledgeable entrepreneurs have a hit list of half a dozen venture capitalists that they are going to go to and that they think will improve their chances of success. Now those aren't always the same six, but three out of the six are pretty much always the same.

So for firms that have been around a long time, that are established, you get the best deal flow, and also entrepreneurs are willing to give you a somewhat better financial deal than they would someone else. Now clearly everyone who comes in at the same time has to have the same deal, but there is pricing flexibility for venture firms that are viewed as having the ability to make a good contribution.

The second thing is that I think the real way that venture capital competition shows itself is not so much in the pricing, as I was discussing, but in the proliferation of new competitive startups, competitive to, say, one of ours.

**So you do battle at the startup level.**

Ten years ago a startup company would position itself, mentally, competitively, against a large company. It would say "how are we going to get around H-P or IBM or Fairchild?" or whatever it was. And I think in the majority of cases the competitors to a startup are other startups, startups or setups. And that's a big, big change.

I think your chances of being successful drop off fairly sharply from the first startup to the second, the third, the tenth. Your chances of succeeding go down a lot. But sometimes the worst competitor you can have is a desperate competitor—they can just create confusion in the marketplace, competition for people, resources, mutual bad-mouthing—it's that level of competition that's made the venture business a tougher place.

**What do you do with a desperate competitor?**

First, we try to be the first one. We don't want to be in the clone business. If you're the first one, you try to make sure that a company's extremely well financed, then you try to use all your resources and positioning to be able to attract good managers. Not often, but occasionally, if we're taking a manager away from an established company, we as a partnership might have to give him a soft landing commitment; that is, "If this doesn't work, come in, work in our offices, we've got some satellite offices, work on another business plan. Work there until you've found another deal—we've got over 100 companies in our portfolio."

So we use our resources to attract the best people, finance them extremely well, try to work the *zaibatsu* in terms of corporate relationships—instead of building a fab, have LSI Logic do this. Get Sun to be a beta site. Kind of work things so that you can

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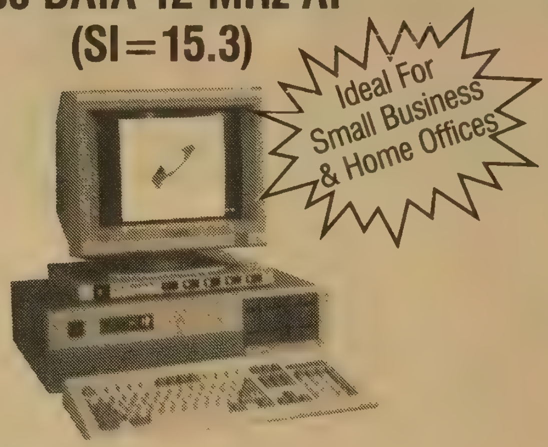

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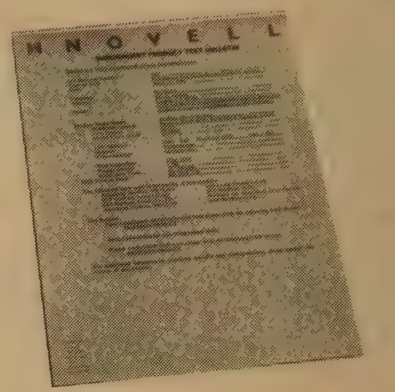

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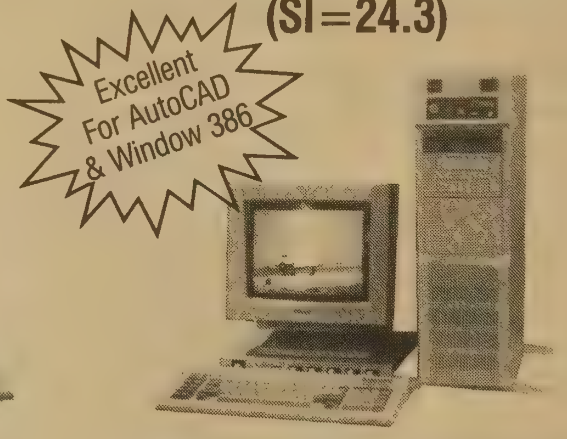

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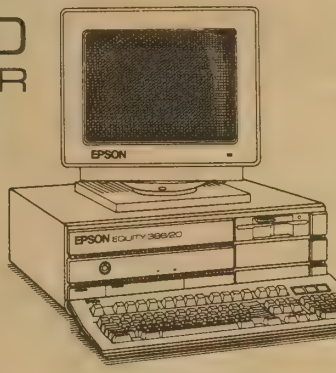

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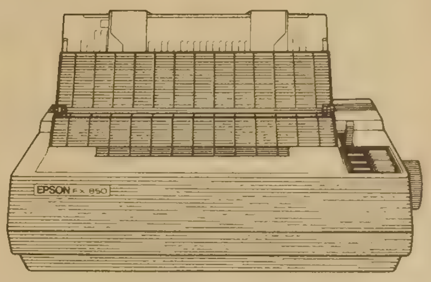

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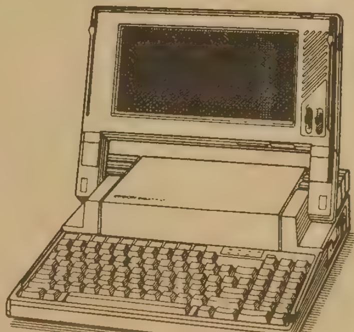

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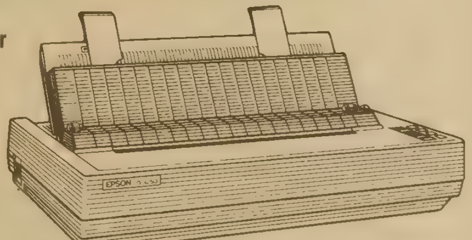

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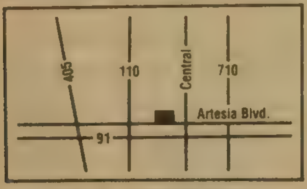

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**So some of the trouble they're going through you can look at from a knowledgeable perspective.**

I can look at it with knowledgeable eyes.

**You were involved with Compaq, a clone-maker in the highest sense. And then there's Wyse, which didn't do well at all. What was different?**

First of all, Wyse wasn't in the PC business, Wyse was in the terminal business. And we invested in Wyse when it was in the middle of a $5 million year, and I guess they didn't get into the PC business until they were over $150 million in sales.

The general thrust in electronics and information sciences is that ultimately everybody's competing with everybody. But it's our policy and practice that we don't fund direct competitors. Now sooner or later, Sun will compete with Compaq. There's only so much space on the desk, after you take your feet off it. (laughs)

**So did you think Wyse's decision to go into the clone business wasn't a good way to go?**

Well, I was really leery, but the real hurdle that we perceived was the broadly advertised, broadly retail-distributed approach—it takes millions and millions and millions to establish a retail franchise, a consumer franchise. It was the theory that we would basically be a dealer's product and just sell with basically no advertising, utilizing our low-cost offshore manufacturing ability. Obviously for a while it did pretty well. I think the problems were less in the theory than in the implementation.

**From the standpoint of the archetypal person in the garage who's got the world-changing idea, what's the best way to shop for venture capital?**

Well, typically, if he's located in Lawrence, Kansas, he's probably in trouble. It just takes more work. He might call the National Venture Capital Association in Washington DC and ask for the directory.

But if you're out here, or if you're in Boston, it's all around you. What you do is go to one of your neighbors who's done this before, and ask him "What do I do?" The second thing you'll do is you'll go down to get incorporated—there's probably less than half a dozen law firms that totally dominate that sort of high-tech lawyering business, and they've got a patter they've repeated so often they could do it in their sleep about "This is what you do, this is what you don't do, this is how you leave your employer, and here are half a dozen of the usual suspects in the venture capital business."

**Can you name a couple of those law firms?**

Sure. In no particular order: Wilson Sonsini, Brobeck Phleger and Harrison, Cooley Godward, and Ware, Fletcher and Freidenrich. I think those four—I don't know how you measure market share, but if I had to pick a number out of the air I'd say the four of them have 80% of the market. Palo Alto is sort of the Peninsula nexus of all that.

**Venture capital firms seem to specialize in certain types of companies.**

Out here, because Santa Clara is right down the road, the general specialization here tends to be early-stage high technology, because that's where people came from, and half of the partners of all the firms around came out of Intel (laughs). They have that knowledge of technology and of markets and of people.

Nationally there's a broader specialization, but here—US Ventures has an arm that's run by Phil Schlein, who used to be the head of Macy's Northern California, which specializes in speciality retailing. A lot of the firms have biotech activities, as we do. Genentech was a company we started. The president of Genentech was an associate here; he left to start Genentech.

**How close to the beginning of your firm did that crop up?**

That was funded in '76. We were founding investors of Hybritech, Applied Biosystems, Liposome Company, Home Health Care of America, which later became Caremark, so we've been active right from the beginning.

**One product I was quite fond of died a quick death last year, and I asked a venture capitalist friend about it. Product seemed good, marketing bad, and he agreed. He said it was a bad venture capitalist firm, which made me think that we don't know**

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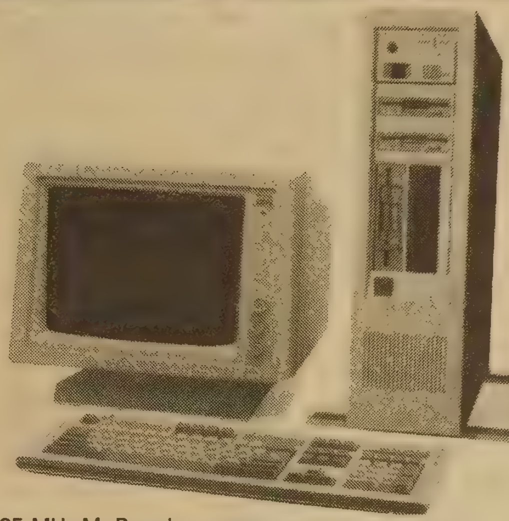

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**nearly enough about how much a venture capitalist can positively or negatively affect a company. Can you give an idea what a bad venture capitalist might do?**

I would think that a bad venture capitalist would commit mostly sins of omission. That is, not help them do the right thing, and maybe give them bad advice.

If anything, there's a whole bell curve in the abilities of firms, and it's important to not only pick the right firm, but to pick the partner within the firm.

**Does an entrepreneur have that choice?**

It depends. Let's say there's somebody that's raising $4 million, and he's raised most of it, and he will maybe raise a little more than he thinks he needs, in order to accommodate you, and then you think this is a real hot opportunity—then he can ask.

**But in general, they can't really ask?**

He might ask, "Who'll be following this?" Or "Who'll be on the board seat?" and then people might ask him who he wants. As opposed to when you buy a car, and as soon as that sucker drives off the lot, you never see the salesman again, this is somebody you're going to spend an excruciating amount of time with.

It doesn't happen so much anymore, but there used to be what we out here called the East Coast venture capital style, which was much tougher on terms, much tougher on covenants, inclined to do tough convertible debenture deals rather than a toothless preferred stock deal, and who from the start acted more in an adversarial than a partnership way. Those people generally went out of business, because they found out that the entrepreneurs and the venture capitalists spent more time fighting than trying to move the project forward. Most of those people haven't been in the business for years.

And some people are more difficult to work with than others, but maybe they make up for it because they're particularly talented or whatever.

But to me a bad venture capitalist mostly is just going to give bad advice like "Oh, the price is too low, let's not raise the money." Or, if the management wants to go out and raise money at ten bucks a share but seven might be a price at which you can get the deal done, not insist that they try to raise money at the lower price, but then they go out and shop around at ten dollars a share and not get anywhere, and the deal's sort of dog-eared, shopworn, and the company runs out of money and then has to raise money at five. People who just have bad judgment and bad vision—"Let's defer hiring a marketing manager." You can give tons of advice. You can give good advice or bad advice. I haven't heard too often about people taking really positively or overtly destructive actions. That's sort of an unusual thing.

It is a word of mouth business, and it takes you many, many years to build a good reputation. Doesn't take you too long to shoot it down. So I think people who behave that way consistently would find themselves kind of way down on the food chain looking at the marginal deals that couldn't get financed anywhere else.

**If you're shopping for venture capital and have a choice of several companies, aren't you likely to go for the firm with the track record and the full range of services?**

That's sort of what we do for a living, is try to, one, do it, and then use that in our marketing. The entrepreneurs try to sell us that we should invest, but basically everybody's selling. We try to sell them that we're the best source of money for them.

**Is it still possible to do a Compaq, a Sun, a Lotus from scratch today, or is it mostly a world of niche markets now?**

We view it as our job to swing for the fences. Starting small potential little niche companies might be kind of your bread and butter—I mean, you've got to hit singles. But in the end, what is going to differentiate us as a firm from others in terms of the contribution we generally make, whether it's to the economy or to the society and the differentiating financial returns, can be if we have companies that don't make us five times what we invested, they make us fifty times, and that you start a major entity that'll be a long-standing, standalone piece of the American economy.

So I think that's basically why we ought to be in business. There have been times, prior to the wave of semiconductor startups, when people said there'd never be another semiconductor startup. They're capital-intensive and it was just too high, it cost $100 million for a fab, etc. But technology changed in terms of computer-aided design, and everything that you know about, and it did be-

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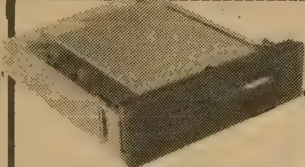

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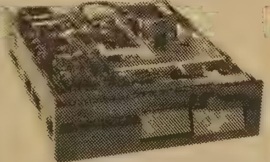

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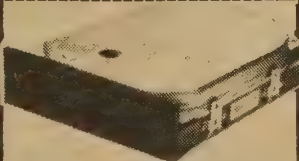

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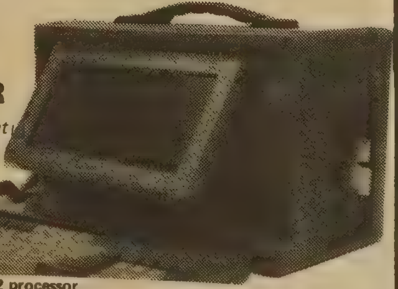

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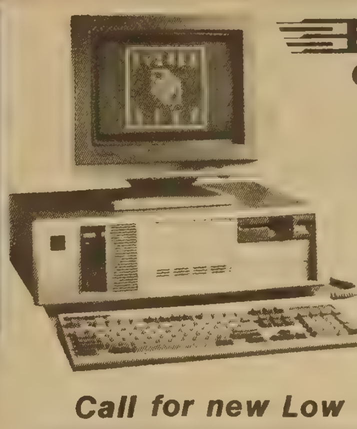

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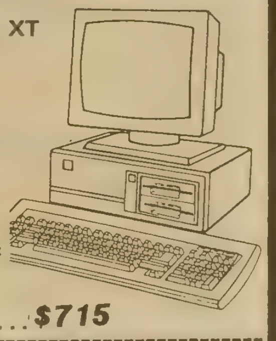

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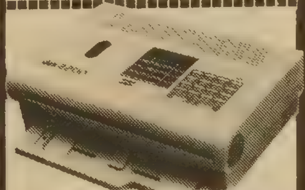

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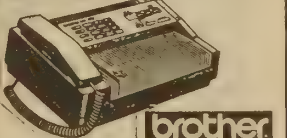

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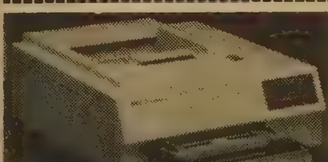

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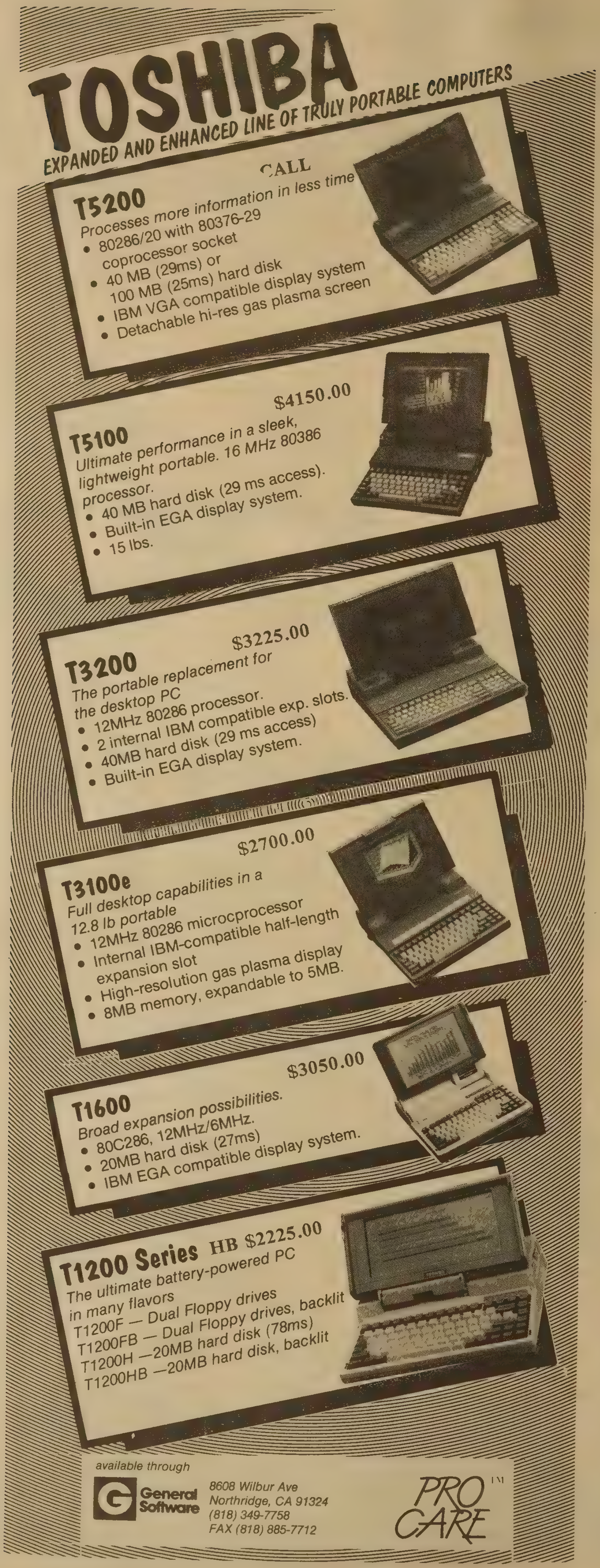

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The microprocessor becoming ubiquitous, I think, funneled a whole raft of things. I think everything—from voice recognition to the miniaturization of everything to increasingly powerful processors, cheaper memory, more user-friendly software—is going to expand markets pretty dramatically. I think you're going to see the integration of televisions and computers—once you have a high-definition television, it will have the bus structure, the memory, most of what you need except the keyboard, for a computer. Once you have a high-definition television, the incremental cost to make that a computer is negligible. It's like where something might cost two dollars and something might cost two dollars and you put it together and it costs four dollars, except in this case something that cost four dollars and something that cost four dollars will cost $4.50. There's not much extra cost you'd have to add into it.

The Dynabook opportunity—that's certainly nothing if not a swing for the fences. If that company goes it'll be a big company; if it doesn't, it'll be a very, very, very small company.

**Isn't Sun, for example, an example of a company that made it after everyone said there was no chance for another company to come in?**

That's right. Apollo was there in the workstation business already.

**And everybody was saying, "That's it. We're done..."**

I think if there's something mildly discouraging to me about the business, it's that after two or three bad years you have a lot of venture capitalists saying, "Well, we've got to diversify. We'll do later-stage rounds, we'll do leveraged buyouts, we'll do specialty retailing, we'll do whatever." And it's not that those can't be good businesses; leveraged buyouts are great, and people have made money in all of those.

But basically, in the entire world there's only one thing that only goes straight up, and that's technology. Human nature has cycles, history has cycles, economies have cycles, nations have cycles, everything has cycles. Technology hasn't had a down cycle since the ninth century. When Rome fell, maybe from 500 AD till 1000 AD or the Renaissance or something, technology kind of drifted. But since about 1000 AD, it's only gone straight up.

> **"There's a whole bell curve in the abilities of venture capital firms, and it's important to not only pick the right firm, but to pick the partner within the firm."**

**So your bet is that that's the place to be, for you and your company—technology as opposed to getting into this other stuff.**

Well, first of all, even if that were not the place for us to be, it would be like if you have someone who's a dancer and say, "Dancing isn't the place to be; you should be a painter." Well, (laughs) unfortunately we're not painters. So I think it's both what our skill set is, what our interest is; we also have a franchise—I could go out and try to beat it with a stick and I couldn't kill it. Also, as a partnership we're working pretty effectively—we've got things in a good balance, and we've just raised another fund, so...

**You're in it for another couple of years...**

(laughs) Right.

**I bet some venture capitalist is talking to those guys in Utah about cold fusion right now.**

I can guarantee it.

**Are you one of them?**

Yeah. If it's going to be that big, even if we don't get in, at least we'll get a front-row seat.(laughs)

We're involved in, I'd say, the two highest-potential superconductivity startups—one is called Conductus, and it's, again, part of the *zaibatsu*. The head of development for Stanford University called us, and informed us of what their people were doing, And we and two other venture capital firms basically funded this. It was the first startup I know that, when it was funded, had no employees. The scientists were there, but they were at Stanford, and we were there with our checks, and then our job was kind of to put that together. This involves Stanford and Berkeley.

Then there's the other, I think, highest-potential one, aiming at different applications of the technology, one that's based out of MIT. It's called American Superconductor.

**It seems that the Japanese are making greater strides in superconductivity than their American counterparts. Is that the case?**

I guess the answer is I don't know. I have no idea where Japanese research efforts stand *vis a vis* American research efforts. I guess the stereotypical view of the situation is that Americans innovate, the Japanese acquire the technology, and then they manufacture efficiently. I think in the long run it would be easier for us, or at least as easy for us, to become efficient manufacturers as it will for the Japanese to learn how to innovate.

I think it would be helpful if we stopped innovating and basically giving it away. There's a lot of talk about pirating of technology, but basically the Japanese have had to do very little pirating. The bulk of the American technology the Japanese have, the US companies have openly sold them at disastrously, ludicrously low prices—the $25,000 license that AT&T charged Sony for the transistor set the stage.

The Japanese semiconductor industry is the creation of, the creature of, the US semiconductor industry. It didn't start up on its own. We created it. We put them in business. TI basically not only cross-licensed all their patents, but sent their engineers over there to make the processes work. I mean, it's a series of such staggeringly arrogant and short-sighted decisions—you keep thinking "There must be something that I don't know in this picture."

I'm on the board of advisors of a Japanese venture capital firm; it's not a competitive firm with ours, it's a firm active in Japan. It has raised money from US investors and invested it in Japan. I did it primarily to learn what was going on there; what I did learn is that the venture capital business in Japan and the US have nothing in common—it's a totally different kind of activity, and precious little technical innovation goes on in small companies; it's a large-company activity. This firm—it's called Jafco, it's a subsidiary of Nomura, it's by far the largest venture capital firm, in fact it defines the venture capital industry in Japan. It's like 70% of the market. They do virtually all low-tech investments. The new generations of robotics and optics—those are happening internally to the large companies.

**Because the large companies have the money to spend without worrying about it?**

Yeah, except my own opinion is that even the innovation that is done there is what I would call evolutionary innovation, and still the overwhelming amount of innovation takes place in the United States. I think we could do a lot better, from the Eureka!/Come Here Watson stage; we could do a lot better from that point on.

But that's not where our problem is. Our problem is commercializing that, and also not selling it to the Japanese, not licensing it to the Japanese, at real low prices.

**It seems like the thing that's missing is the industrial giants like J.P. Morgan who put together all those big deals in the last century.**

I don't think so. Well, that of course was US Steel, Big Coal, Big Steel—but when the Bessemer furnace came out, that was high technology. It was really a revolutionary way to do things. You've had your old-line venture capital firms, the Rockefellers, the Whitneys—I think JP Morgan was less someone who funded innovation than someone who took large companies and created even larger monopolies. He understood monopoly pricing, market share; he was a real economist.(laughs).

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**Is there anybody among the entrepreneurs out there that you really admire? Who do you set your sights on?**

The two gentlemen I think are probably the highest quality entrepreneurs in the broadest sense are Gordon Moore of Intel and Paul Cook of Raychem. In terms of their technological contribution, their personal leadership, their personal qualities. I suppose Hewlett and Packard are kind of like the godfathers of that, but of course that company was started in the '30s. From what I've seen, Gordon Moore and Paul Cook probably rank next in the pantheon, in my opinion.

When it used to cost a million and a half dollars to start a company, you got between 50% and 65%; now when it costs three million to start a company, the tyrannny of those numbers is pretty inexorable. One of the reasons is, I think, that the pattern of bootstrapping a guy in a garage that works for $20,000 a year, works for a year and builds a product—that pattern barely exists any more for two reasons.

First, entrepreneurs are largely not willing to make much up-front financial sacrifice. They like to come on board even and maybe with a risk factor adjustment. I think maybe the fact that capital gains are taxed at the same rate as ordinary income makes them more current-income oriented. When something was taxed at 50% versus 20%, you'd be willing to make some current-income sacrifices for opitions, but now it's all taxed the same. So pretty soon you're moving into pretty nice offices—I mean, you don't have Monets on the wall yet...(laughs)

Second but more importantly, in that competitive environment I talked about, where other venture firms are starting competitors, you can't afford to bootstrap a guy on $200,000 for a year at a real low-cost, low-key effort to develop his prototype. Which you might have done ten years ago, and hell, then you'd own a nice slug of the company for a small amount of money. Now you can't do it, because as soon as someone hears about your project during that period he'll leapfrog you. So the competitive environment has ratcheted up the amount of money that has to go into a company. So that affects returns a lot.

**It's like bidding for ballplayers.**

Yeah, that's right. (laughs) Sometimes almost the same entertainment value.

**When I asked who in the industry you admired, the group I expected you to be picking from was Gates, Jobs, Kahn, Kapor, or any of these guys, and you picked a generation earlier. Have these guys not proven it to you yet?**

No, I think the reason I did what I did was that if I picked any of the generation that you describe I'd be, perhaps, offending someone by omission. And second, none of those people of the newer generation could, if they knew them well, help but agree with me.

> "In the entire world there's only one thing that only goes straight up, and that's technology. Human nature has cycles, history has cycles, economies have cycles, nations have cycles, everything has cycles. Technology hasn't had a down cycle since the ninth century."

Chou En-Lai was asked shortly before his death in a wide-ranging interview whether he thought that the French Revolution had been a good thing. And he said, "Well, it's too soon to know."

You know, there's always time to crow. Premature crowing is a real waste of time, and premature picking of this generation's entrepreneurial icons—it's just too soon to know. ■

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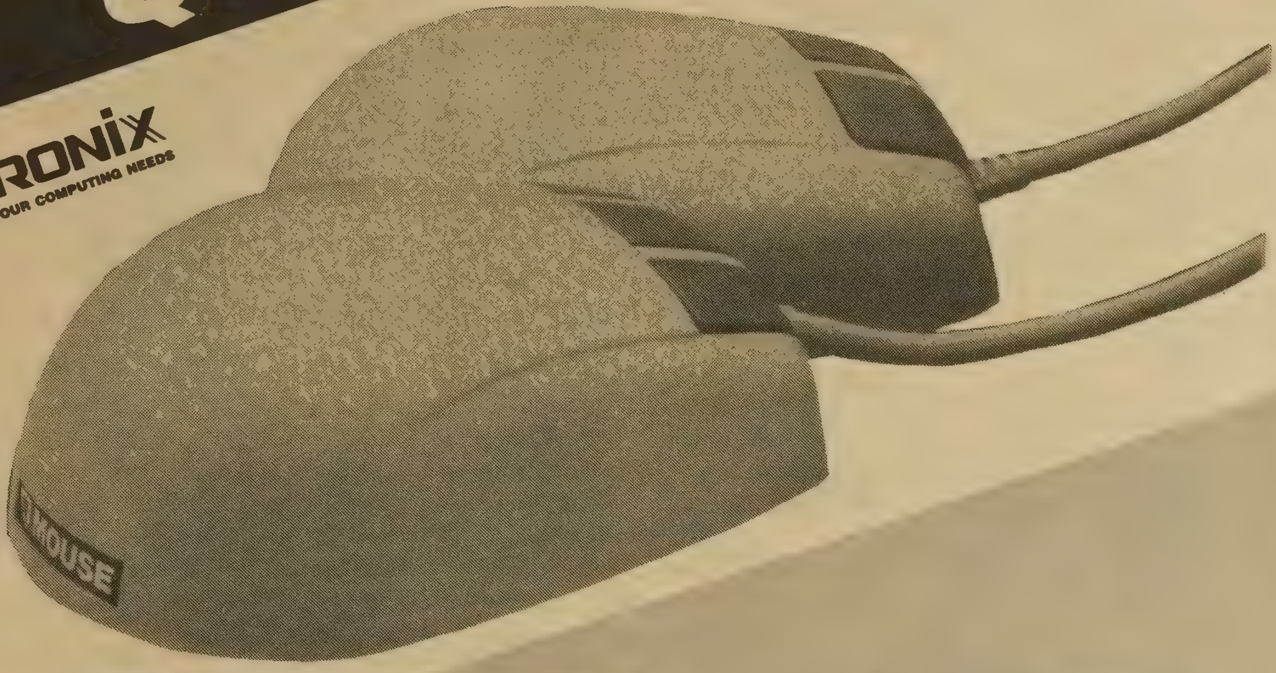

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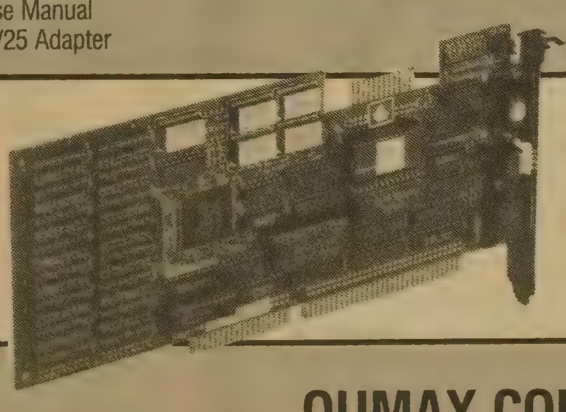

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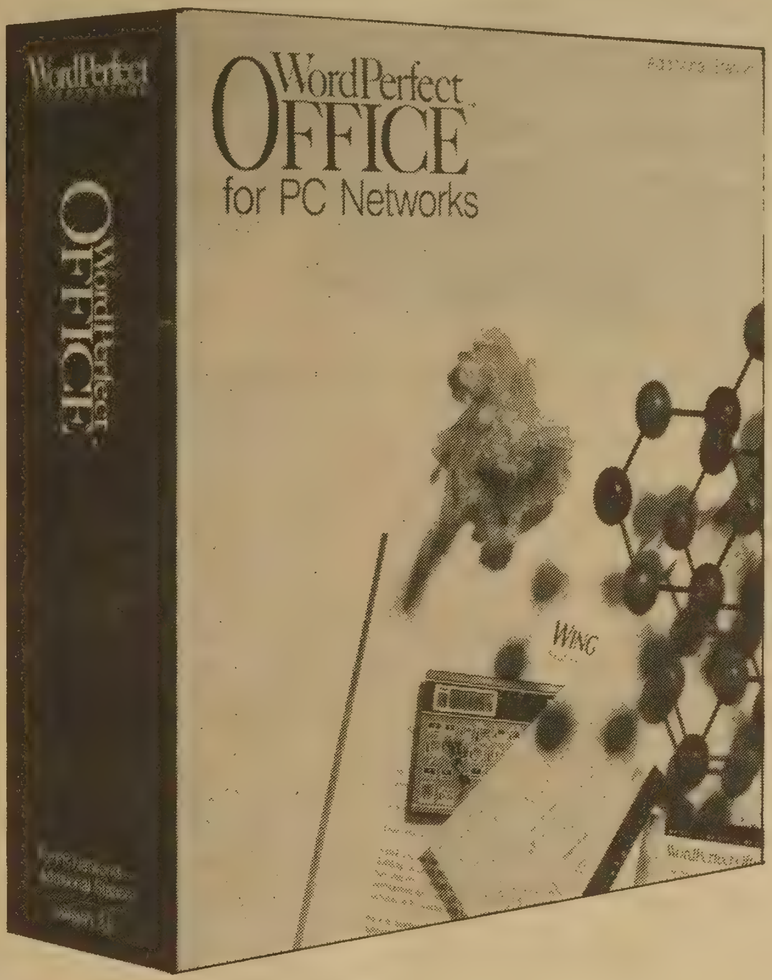
# LANs: The Next Generation

## *Groupware And Office Automation Herald New Networks*

**By Wayne A. Yacco**

The local-area network, or LAN, began as a benefit to large groups of personal computer users who needed access to common resources and to each other. Nodes on a LAN can share costly equipment and files; they can communicate with each other easily even though they are in different areas, offices, or buildings.

LANs have always had an obvious appeal for larger companies, but far less appeal to the small user who, by and large, preferred to transfer information by diskette or modem. That may be changing due to new classes of applications—group-productivity and office-automation software—which provide benefits based on the currency and collective distribution of the information they provide.



**Office automation products like WordPerfect Office are making LANs more attractive to relatively small businesses**

## LANs In Large Organizations

When there are dozens or even hundreds of users in an organization, LANs make a lot of sense. They're the easiest way to let users in mutually remote locations communicate with electronic mail (email); they can be used to share especially expensive or scarce resources like printers and large hard disks; they can provide dependable backups of common data; several users can work with the same program or modify the same database. For large groups, these activities are impractical without networking because of the number of users or the physical separation of users or resources. So big users have been quick to corral their herds of desktop computers into a network environment.

Most users, though, aren't part of those vast, networked organizations. Today there are over 20 million personal computers and only about 200,000 local-area networks. It is estimated by companies like Novell, the leading vendor of LAN software, that an average LAN has about eight nodes or workstations on it. This implies that only about eight percent of the personal computers in use are networked.

## Sneaker Net

One of the reasons that more computers aren't yet networked is that smaller organizations are likely to use sneaker net for resource sharing. That is, when users need to transfer a file, or talk to the worker in the next cubicle or office, they put on their sneakers and tiptoe on over there for a few minutes. Sneaker net can offer the advantage of a shared cup of coffee and, if you're lucky, maybe a donut.

Sneaker net is a big buzzword right now with the networking community. LAN vendors would like to convert everyone from data with donuts to their still-fairly-expensive hardware. But before they'll dunk thousands into the basket for a few cards, some cables, and software, many companies will continue to take a diskette over to the computer connected to the laser printer for output, or to the unit with the big drive, to transfer an occasional file.

Most smaller companies can justify the cost of a LAN by the need for specific applications like order entry, inventory management, or some other type of accounting. However, in many smaller companies, accounting applications are done by just one person. Simultaneous access to orders, inventory, or accounting reports isn't likely to be a big incentive. That's one of the reasons that many small organizations have comfortably managed to avoid networking altogether.

## Groupware And Office Automation

Now, though, applications are appearing that offer benefits even to the smaller firm. Companies that have never considered networking for accounting activities are looking at the real-time interaction and centralized-data-management benefits of office automation with the gleam of installation in their eyes. The trend could begin in earnest over the next six to twelve months, as interest in office and group applications, or groupware, turns into budget line items.

Early users of networks exploited every aspect of resource sharing. The next generation of users will primarily be lured by the benefits of centralized file control and/or real-time benefits: access to information and interaction with other users. Increases in productivity can be substantial with networked, real-time applications.

Although small groups may be able to share data without a network, they are less likely to do it with any efficiency. If a few workstations are producing large volumes of documents, networks can offer an effective means of managing them. Centralized files can reduce duplicated processing, storage space, and search effort and enforce adequate backup procedures.

Even when it's possible to share data with sneaker net, it's impractical to do it on a real-time basis. And, certain types of information just aren't valuable unless they're absolutely fresh. For example, a consultant talking to a client may need to make an appointment that includes one or more other staff members. If all of the group calendars are on line, an appointment can be scheduled in real time without conferring directly with several individuals. Offline, the same process may take several iterations before all schedule conflicts are resolved. The delay could mean having to sell the client all over again, when the meeting is confirmed, or losing the job.

## The New Generation

One of the earliest scheduling programs is *Network Scheduler* from Powercore, Inc. *Network Scheduler*, originally titled *Sum:Time*, includes a calendar and detailed schedule as well as support utilities for note taking and filing. The latest version extends the scheduling of staff and meeting venues to other resources such as audio-visual equipment. Network security facilities are also included.

WordPerfect Corporation has introduced an office-automation product, *WordPerfect Office*. *Office* combines a task-switching shell to manage applications with a file manager, a notebook (similar to an electronic Rolodex), a calculator, email, calendar with to-do lists and scheduling capabilities, and editors for developing macros and programs. Network security provisions are included.

David Clare, WP's senior manager of PC marketing, is optimistic about potential for *Office* in small organizations. "There's two buying patterns that we have noticed," says Clare

**WordPerfect Office offers a variety of office automation functions, including email and scheduling.**

about the product. "One is where [users] have a network and need software to make the LAN easy to use. The second is where they've purchased *WordPerfect*, and they need to exchange documents but don't have a network yet." Clare has seen the trend toward small networks in *Office* user registrations. "What a LAN gives you is real-time ease of use," he says of the benefits for small systems.

Futuresoft offers a groupware product called *Right Hand Man*. The program is essentially a networked desktop utility with the addition of email and calendar functions: a to-do list and group scheduler. According to national sales manager Randall Genser, there are many examples of users purchasing LANs to get the product's real-time functions: "Doctors and lawyers frequently use the package as a standalone application, just changing users to update the scheduler. In the past month alone, I've talked to four groups that are planning to purchase LANs just to use the package. We have a law office that went and invested in a ten-user package before purchasing their LAN."

**Dealers who sell smaller networks find that almost all of their sales are still made to users with specific application needs.**

Support software such as *R2LAN*, *Netremote Plus*, or *Close Up LAN* can be used to provide technical support or training to users on a one-on-one basis. Problems can be solved while they occur in real time.

*R2LAN*, from DCA, allows a network node to call another node and control its resources as if they were local to the calling node. The same access can be had via modems from, or to, off-LAN workstations through the use of an asynchronous communications server. In addition, nodes can have access between two LANs if both have asynchronous communications servers. Password security and other network management is provided. In addition to providing support, *R2LAN* can be used to initiate unattended operations on a workstation, which can later be accessed for information products (output).

Brightwork Development's *Netremote Plus* offers essentially the same capabilities as *R2LAN* but does so by combining two products. One of the products is *Netremote*, which provides remote control of nodes on a network. Because *Netremote* was specifically developed as a LAN application, it has parsimonious memory requirements of just eight to thirty-one kilobytes per node. The *Plus* version bundles *Co/Session*, developed by Triton Technologies, which provides remote capabilities over modems.

*Close Up LAN*, from Norton-Lambert, provides one-on-one remote access and more. It also supports one-on-many or many-on-one sessions that allow groups of users to interact simultaneously. That makes it ideal for applications like on-line training, where many users can learn from an expert, or critical technical support, where many experts can participate in a diagnosis, simultaneously.

Whenever a group must work with outside clients, a network can provide genuine benefits. Another of these applications is in contact management. Real-time contact management is important if you need to know what other members of a group are telling a client. Contact-management software can maintain the time and date of each contact, telephone numbers, associations and related contacts, and notes on each conversation or meeting. This can be invaluable when partners are working on an account together. Contact software can prevent contradictions or the appearance of conflicting representations that can damage confidence and credibility. It can also eliminate the need for all members of a group to participate in every client meeting or to meet with other group members just to discuss client meetings and minor progress on an account.

*Timeslips III Network Edition* is a memory-resident client-billing package from North Edge Software that uses as little as 10 kilobytes of RAM for its overhead when running from optional expanded memory. It will allow users to enter time slips complete with notes about the client contact. Time slips are stored in a database residing on the network file server. The database features passwords protection and record locking. *Timeslips III* also includes a complete accounts-receivable system and can send compatible files to many popular accounting packages.

Time slips are the records that keep accounting and contact information about clients and jobs. Who you are, and what you're doing for which client are required time-slip fields along with the time spent. The rest of a time slip can have any type of notation. A search for any phrase or description can subsequently be conducted throughout the time-slip database.

The program itself can be used to determine the time spent on any activity. An automatic timer can run while the user talks or takes notes during a telephone call or, in the background, while work is being done on a word processor or spreadsheet. When activities on behalf of one client are interrupted by those on behalf of another, a new timer interrupts the previous one while time is kept for the new client. Interrupted time slips can later be resumed, using a last-active-slips key (F8), until all activities are completed.

*Timeslips* has many of the real-time and data-centralizing features that will attract a new class of user to LANs. Reports, sorted by time, date, client, activity, user, dollars billed, etc., can be used for a tickler function and to-do lists. Any user on the system can view client activities of any other user making it easy to coordinate work for a client or to keep track of progress, commitments, or notes.

North Edge president Mitchell Russo says that the developer took a chance creating the network version of *Timeslips:* "We went out on a limb to release this product because when we looked at the numbers, they did not justify the time and expense needed to create a network edition. What we counted on was people buying networks to use our product. And that's what we've seen happen with our standalone users. Many of them are going out and buying networks because of the network edition availability." Some of the LANs running *Timeslips* have over 200 users, but a majority are under four nodes; almost all are under eight.

**It seems just as reasonable that the growing number of real-time-application introductions will increasingly promote more small networks.**

DayFlo Software Corp. has a network version of its *DayFlo TRACKER* personal information manager. It supports applications like client-contact management in its own database with a combination of structured and free-form text. Records in *TRACKER* that share a common field are linked by a common index. Additionally, a multiple-value-field feature can accommodate up to 101 different indexed values per record. For example, this lets a user have contacts with several telephone numbers, all of which would appear in the same expandable field. Full editing capabilities and mail merge are included.

However, the current edition doesn't allow real-time updating. The company is planning to come out with a new version accommodating the feature as soon as it can be developed. "We are getting a strong demand for a multiuser version," said director of engineering Steve Bernard. "People have been frustrated because they didn't have the ability to do a real-time update." So, they've been using clumsy work-arounds and agitating for changes.

The company is responding to those stated needs. Bernard continues, "I've got a real-estate developer who said 'I'll put in a network as soon as this is multiuser.' He doesn't need the network to move his files around—he does it with diskettes—

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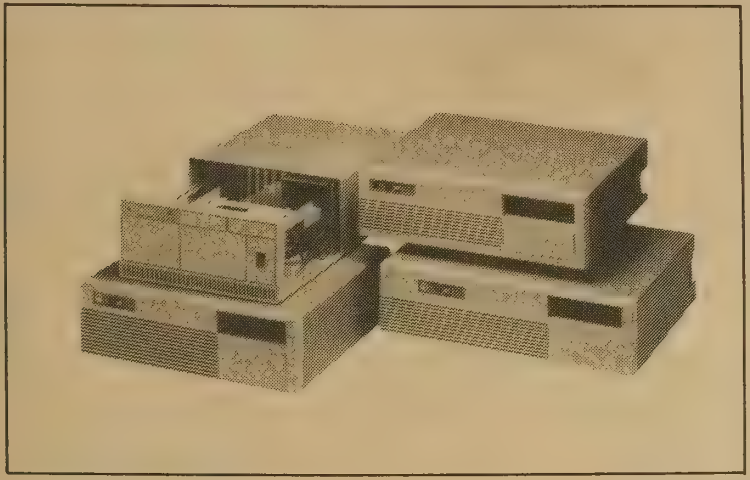

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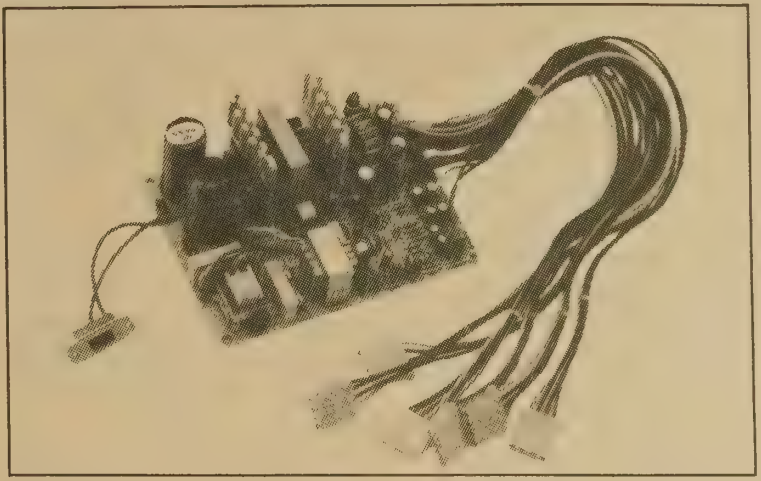

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but he said he'll put the network in when the product's got simultaneous-update capability. I think that the year of the LAN is finally starting to happen."

## Small Networks Today

Besides the trend being experienced by the vendors themselves, there isn't much activity with office automation or group-productivity software yet. Dealers who sell smaller networks find that almost all of their sales are still made to users with specific application needs.

Vahe Aghabegians, president of Microcomp, sells one or two LANs each month. The Burbank, California-based computer reseller says that two years ago networks sometimes went unused. Customers were even asking him to uninstall them after disappointment with the available application software. "That's changed," he says of the current market, "but group-productivity software still needs more development for ease of maintenance by the network supervisor." Now there are more applications, but still "mostly for distributed processing of order entry, accounting, word processing, and spreadsheets."

Other small dealers tell the same story. Jeff Lasman is vice president at Management Accounting Systems, Inc. (MAS), a Los Angeles-based VAR (value-added reseller), which often writes applications in *DataFlex* for the 8-to-15-user LANS it sells. According to Lasman, MAS customers include the LA Raiders and *LA Weekly*, where he is currently installing a seven-user network that will automate order entry and production for classified advertising. Lasman is also a director of the Los Angeles Novell User's Group (LAN-U) and the editor of its newsletter. Says he, "Our users are very application specific."

The two or three LANs that the company sells each month are still not using group-productivity or office automation software although the company does support one groupware application: *Office Works* from Data Access. *Office Works* incorporates email, telephone messaging, calendar with individual and group scheduling, document control, and name-and-address data management.

The number of LAN installations continues to grow but, so far, not because of office automation or group productivity for the small office. Software Central in Glendale, California, has a new network division headed by Ken McCallick. McCallick's group sells directly—mostly 3Com or Banyan's Vines—to large LAN customers with 30 to 1,000 nodes. They also sell smaller systems, including Novell, through resellers. Altogether, Software Central currently sells about five to six systems a month and its LAN business is growing rapidly.

Central is also planning to introduce preconfigured LAN packages that the customer can take out of the box, plug in, and run without configuration headaches. Once their proposed LAN-In-A-Can begins to ship, the company expects to sell five to six small, ready-to-run networks a week. Robert Lamishaw is the company's director of technical support and also the man in charge of developing LAN-In-A-Can. "Nobody knows what office automation is, what to do with it, or how much to spend on it," says Lamishaw of the current market. "It's often one of the justifications for installing a LAN but seldom one of the uses."

According to Software Central's training coordinator, Dave Milligan, over 90 percent of the systems the company sells are for accounting applications such as inventory, order entry, medical-office management, or for legal offices (primarily word processing). Office automation is still not a big part of sales.

**Even when it's possible to share data with sneaker net, it's impractical to do it on a real-time basis. And, certain types of information just aren't valuable unless they're absolutely fresh.**

Larger distributors of computer products haven't seen much activity with groupware yet either. Dave Wagman, co-chairman of Softsel, the computer-products distributor, feels that "We're a long way from that [groupware] being a meaningful product category in terms of sales."

## The Future

The comments of these LAN resellers and distributors might lead one to a somewhat pessimistic conclusion regarding groupware and office automation. However, promising new software is just being introduced and it takes time before new applications begin to be widely distributed and accepted. As more titles appear, the market will gain credibility and users will begin to ask for groupware—and the networks they need to use it.

Information Research is just about to begin shipping *SYZYGY*, one of those titles that might help to make a difference. *SYZYGY* provides real-time access to management data; the program combines functions for managing activities, resources, schedules, and budgets. Data can be entered into a structured database and then used for the management of multiple projects, people, schedules, and budgets in real time. Managers can set objectives, define projects and tasks, identify resources, assign responsibilities, and set due dates, milestones, keywords, budgets, and priorities.

Steve Lents, National Sales Manager, Technical Products Division, is the person responsible for selling LAN software for Ingram-Micro D—the world's largest distributor of computer products. Lents thinks that this category of software is about to have a substantial impact. "*SYZYGY* is going to be real hot. It's going to do some damage out there [presumably, to its competition in the market]. Managers will go out there and order networks just to have *SYZYGY*'s functions," he says.

Market Intelligence Research Company (MIRC) has predicted that departmental/workgroup multiuser computer systems will be a $40 billion worldwide market by 1995. The research was reported in a new $1495 study titled "Multiuser System Markets: Departmental/Workgroup Applications," which deals with systems that provide simultaneous access to a common set of data.

Although LANs are not included in the study, there is every reason to believe that LAN applications, which also provide multiple users with simultaneous access to common sets of data, will constitute a large market in coming years. That seems like a reasonable assumption if LANs continue to be an alternative for workgroup applications as they are today. And it seems just as reasonable that the growing number of real-time-application introductions will increasingly promote more small networks.

Software Central is clearly preparing to position itself for a forthcoming surge in small systems with its LAN-In-A-Can. Group-productivity and office-automation software may provide much of the impetus for this growth. As Central's McCallick says, "If it's ever out there where you've got all the hardware packaged and the windows, menus, email, scheduling, word processing, and the other stuff that you need, somebody's going to make zillions." ■

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WordPerfect Corporation
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Brightwork Development, Inc.
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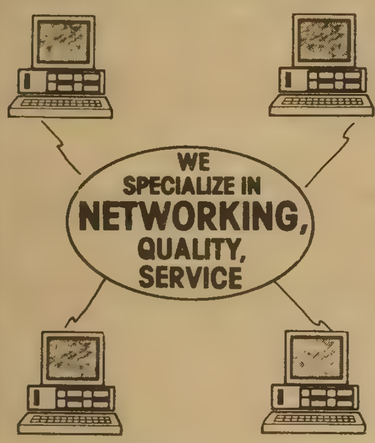

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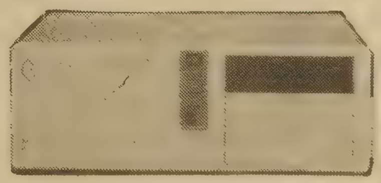

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# Mitsubishi's 286L

## A Desktop-Laptop Hybrid

### By Ed Kahn

The 286L offers the power of a desktop machine with portability

Mitsubishi Electronics, long a leader in everything from automobiles to television, has finally made its entry into the laptop field with the introduction of the MP 286L, a high powered 80286-based unit that offers lots of expansion possibilities. The computer comes in a wide range of configurations and offers numerous options.

Nevertheless, the MP 286L is a mixed bag of good and bad. The unit has four expansion slots—but they are all proprietary, meaning that you are limited to the cards that Mitsubishi sells. The keyboard has a wonderful feel and some great features, but an unusual layout. And finally, although the unit is a laptop, it does not offer battery operation as an option. So what Mitsubishi has done is straddle the line between a desktop unit, which it equals in power, and a portable, which it resembles in small size and an LCD display.

## Configuration

The MP 286L comes in several configurations. The least expensive model uses two high density 3.5" disk drives. The most expensive model includes a 40 Mb hard disk and a numeric coprocessor. Each of the different models allows you to further enhance it by filling the expansion slots with options. Mitsubishi correctly describes its machine as a desktop/laptop unit. And for those who require the portability which it offers, it may well fill the bill. The unit I reviewed, the 286L-240EVP, features a 40 Mb hard disk and a numeric coprocessor—an option that is not user-installable. It carries a retail price of $5395.

## Features

Even though this unit does not come with a battery option, it is designed for those users who will carry it from place to place. One of the options is a simple carrying case ($99), but more significantly, the standard unit comes with a switch which allows you to operate it on either 115 or 230 volts. This means the unit will operate in most places in the world where electricity is available. One of the advantages of this unit over some of the battery-operated portables is that there is no external power supply to contend with.

The unit comes with an extra large LCD screen measuring 11" diagonally. It features a high resolution 600 X 400 lines in text mode and can be set up to show either dark letters on a light background or the opposite. Unlike any other machine I have examined, this one has a switch on the display that allows you to reverse the display. I always prefer the dark letters on a light background, and flicking the switch is a lot easier than selecting an inverse display through software.

Standard equipment on the laptop includes an enhanced graphics video controller card, which comes installed in one of the four expansion slots. Mitsubishi was wise to install the video system as a card in order to accommodate new video standards that will keep the machine up to date with the latest in video standards. So far the company has already made one such upgrade. By setting dip switches on the card, you have a choice of external monitor options ranging from monochrome through EGA. In monochrome, the display shows eight shades of gray to take advantage of color software.

The keyboard is as full as any laptop's, with separate keys for all cursor movements rather than the inclusion of an "Fn" key which forces the cursor arrow keys to double for PgUp, PgDn, Home, and End. But the layout is a bit unusual, with function keys one through eight on one row and nine through twelve on a row above the others.

An embedded numeric keypad is well thought out, but still doesn't quite work for me. They never do, so this is not a shortcoming of Mitsubishi's design. The use of the optional numeric keypad ($158), however, makes the keyboard better than what comes with most desktop units, because the standard keyboard still has all the cursor movement keys so you don't have to choose between using the numeric keypad for numbers or cursor movement. You end up with the equivalent of one of the nice full keyboards you can buy from third party vendors. I am glad that Mitsubishi provided indicators which light when the CapsLock, NumLock, and ScrollLock keys are toggled on. They have also thoughtfully provided a reset button—all too rare on both desktop and laptop units.

**Mitsubishi has achieved a good balance with this unit. If you do not need battery operation, but want portability and power, this is a machine to check out.**

Mitsubishi offers a high density external disk drive ($525) as an option. I like this drive better than many I've seen because of the smooth way it works with the computer. It gets its

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| Tosh-720 720K | .85 |
| Fuji-144 1.44 MB | .105 |
| Sony-144 1.44 MB | .100 |

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| ST-225 2-MB HDD (65 ms) | $210 |
| ST-238 30 MB HDD | .225 |
| Mitsubishi 40 MB HDD (22 ms) | .400 |

### Modems

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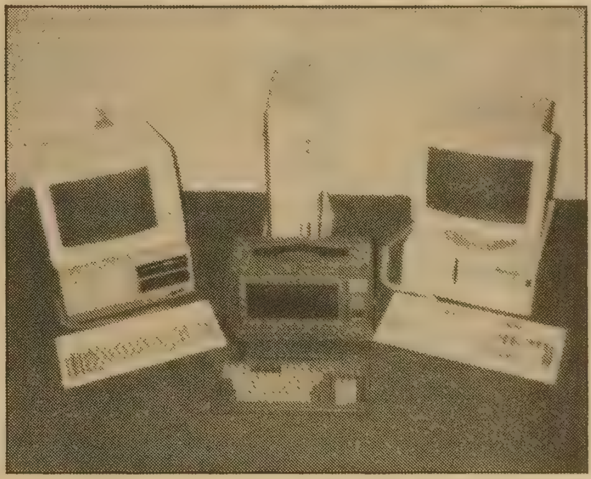

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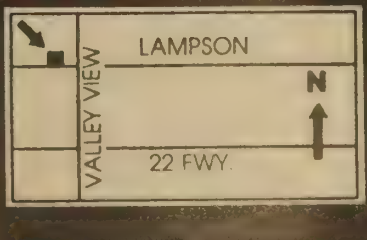

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power directly from the MP 286L rather than from a separate electrical outlet. This offers several advantages, including the freedom of not having to turn on the drive in addition to the computer itself. I guess this is one of the advantages of designing a laptop that doesn't have to work around the requirements of battery operation. The result is that you have a laptop that offers the same ease we have come to expect from a desktop unit: a hard disk, a high density 3.5" floppy, and a high density 5.25" floppy, all ready to go when you turn on the computer.

## Slots

Of the four proprietary expansion slots in the MP 286L, one holds the video controller card. A second slot accommodates the memory expansion card. A 2 Mb expansion card is available for $1530. Mitsubishi has thought out the memory expansion thoroughly. This memory is configurable as either extended memory or as expanded memory (EMS). You can select any or all of the 2 Mb as expanded memory. Whatever portion you do not designate as expanded memory—selected in multiples of .5 Mb—will be configured as extended memory. This flexibility permits the use of any software that you may wish to use. This arrangement provides for an extremely powerful and versatile computer.

A third slot can use the internal 2400 baud modem ($499). The modem does everything that you would expect from a Hayes compatible unit, but unfortunately Mitsubishi did not include a speaker in their design. Over the years I have grown accustomed to expecting a speaker so I know what is happening. Some of the software I routinely use requires this feature. *Hotline* 2.1 ($99), which I use for almost all my telephone dialing, requires a speaker, as you pick up the telephone receiver only after the party answers. Mitsubishi's design does not allow me to use this software, which has become an integral part of my computer use. You can avoid this problem, however, by using an external modem connected to one of the two serial ports that comes with the computer. Although this does not make quite as compact a system, the tradeoff is that it solves a problem and saves a few bucks in the process.

There is a fourth expansion slot, but as of this writing Mitsubishi has no cards to fill it. They are, however, obviously allowing for future expansion needs by the inclusion of the additional slot. At some point they will have to make provisions for networking if they are to make inroads into the corporate workplace.

## Conclusions

In addition to the excellent hardware configuration, Mitsubishi has included a fair amount of software to simplify setting up the machine and checking it out. A disk of diagnostics software, as well as MS-DOS 3.3 and GWBASIC 3.2, comes with the unit. In addition, with the unit I reviewed, Mitsubishi included an elaborate disk caching program, *SuperPC-Kwik*, which significantly speeded up lots of operations. This system is ready to go once you install your applications software.

Mitsubishi has come about as close as you can get to offering a desktop computer in a laptop configuration. With the addition of an external EGA monitor, you have just about everything except the expansion possibilities provided in a conventional desktop unit with standard expansion slots. The tradeoff, however, is the portability of the unit. You can unplug the monitor, external disk drive, and numeric keypad and carry the basic unit from location to location with a minimum of hassle. Mitsubishi has achieved a good balance with this unit. If you do not need battery operation, but want portability and power, this is a machine to check out. All the prices I have mentioned are list, and I am certain that street prices will be competitive with other machines in this class. ■

## Resources:

**Mitsubishi MP 286L-240EVP**
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**Hotline 2.1**
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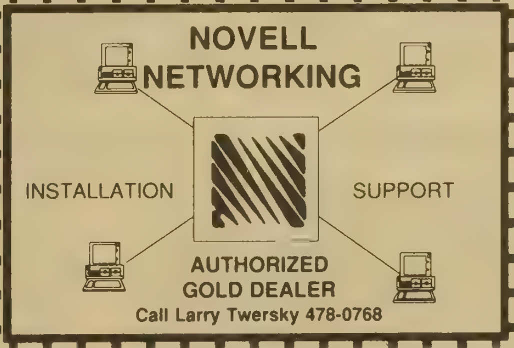

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# MAC @ WORK

## IN THIS ISSUE...

70
Aldus Persuasion
By Mary Eisenhart
An elegant interface makes it easy to design effective slide presentations.

74
BMUG

78
Macintosh Buyers Guide

# Aldus Persuasion:

## *Desktop Presentations For The Non-Artist*

**By Mary Eisenhart**

Using imported graphics and Persuasion's easy-to-use text features, creating slide presentations is quick and simple.

When Aldus announced *Persuasion* last year, amid much fanfare and celebration of strategic alliances, it was touted as the software that would bring the promise of the Macintosh to the suddenly-hot field of desktop presentation. This package is so simple, the hoopla suggested, that even a computer-phobic senior executive can whip up a professional-looking slide show, complete with handouts and lecture notes, in just a few minutes. The power to be your best, indeed.

In many ways, *Persuasion* comes remarkably close to living up to its PR. Having recently spent a couple of hours talking a brand-new Mac user through a hard disk installation over the phone, I am not prepared to believe that a computer illiterate can realistically

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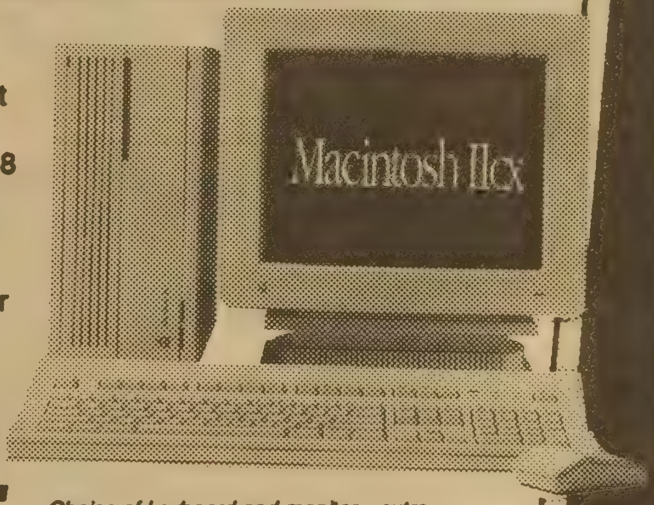

*Choice of keyboard and monitor—extra*

## Macintosh SE/30

As the highest-performance member of the compact Macintosh family, the Macintosh SE/30 combines the footprint of the original Macintosh design with the advantages of the latest technology—the 68030. The Macintosh SE/30 also includes the Apple FDHD Internal Drive, a 3.5-inch floppy drive that can read and write Macintosh, MS-DOS and OS/2 disks.

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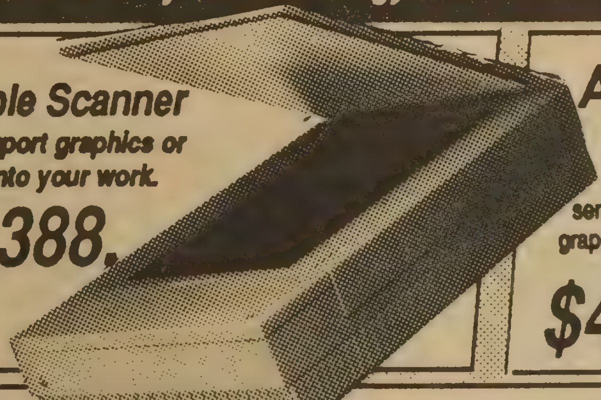

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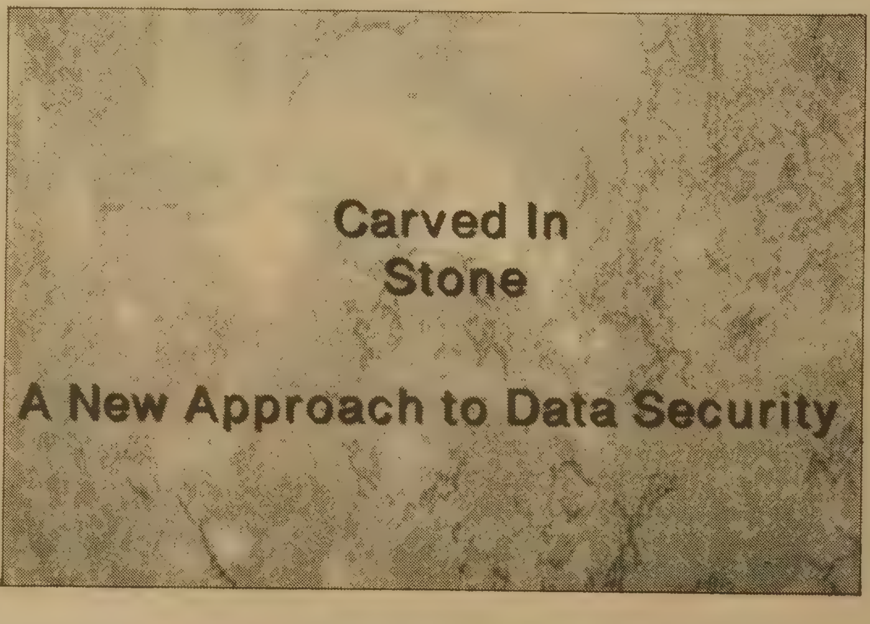
expect to wow the CEO with the arts of *Persuasion* by starting the tutorial an hour before the meeting. However, the program's interface is simple and elegant; once you've grasped a few essential principles about what layers do and how to import different types of files (graphics in various formats, database and spreadsheet files in either WKS or ASCII), you're able to create dramatic effects by simply grabbing selected elements and moving them around till you've got them the way you want them. After you've mastered the basics, *Persuasion* offers plenty of depth—presentations can be enhanced with such niceties as two-color radial fills and exploding pie charts, and you can take advantage of the program's template-creation capabilities to save yourself a lot of wheel-reinventing when it's time to update your information later (and if even that's too much design work for you, *Persuasion* thoughtfully provides you with a nice assortment of Auto Templates suitable for different types of presentations). Much of *Persuasion's* interface is so intuitive and streamlined compared to, say, *PageMaker*, that Aldus might do well to adapt it to an entry-level DTP package.

## Who Needs Persuasion?

If you spend much of your working life making visual presentations based on slides, you should probably take a very good look at this package—the color handling and graphics options are powerful and a lot easier to deal with than some of their counterparts in standalone programs. Especially if you didn't spend much time in art school before hitting the job market, you'll appreciate the fact that *Persuasion* makes it relatively difficult to create aesthetic disasters—for instance, if you want to mix fonts on your slide, *Persuasion* does its level best to discourage you (essentially, if you want to do it, you'd better get familiar with layers and masking fast…).

If your presentations tend to depend more heavily on black-and-white handouts and overheads, particularly if they're mostly text-based, you might want to take a look at a less full-featured, less expensive presentation organizer, including early releases of *PowerPoint* or *More*; *Persuasion* may be more than you really need, even though you'd probably enjoy using it and produce impressive results quickly. If there's an upgrade path to color slides in your future, though, consider *Persuasion* seriously.

*Persuasion* can output your presentation to 35mm film recorder or a variety of laser and other printers, including color devices. Additionally, a host of service bureaus (the strategic alliances that make the product viable) stand ready to convert your *Persuasion* files into slides or color separations. Finally, the program will run your slide show directly on your Mac's screen; however, unless your presentation is quite simple and largely text-based, you should not consider this as anything but a preview function—even on a Mac II with five meg of RAM just for *Persuasion*, or an SE/30 with four, waiting for the screen to draw all of a slide's elements is slow enough to be a real annoyance.



Carved In Stone

A New Approach to Data Security

**Once you've created text in the outliner view, Persuasion automatically arranges it on the slide.**

Also, forget *Persuasion* if you haven't got a hard disk, and a good-sized one at that—it's another one of those six-diskette monsters with its own installer. While it requires a minimum of a megabyte of RAM, it will quite cheerfully take as much memory as you care to give it, and gleefully create very large files (under MultiFinder on a four-meg machine, with a memory allocation of 800 K, it refused to open a 500 K presentation, so watch your file size).

While it is possible to take advantage of some of *Persuasion*'s functions on a monochrome system, you'll be able to see what you're doing more accurately on a color display.

## Using Persuasion—Simple Is Beautiful

The first step in creating your presentation is to outline your ideas in *Persuasion*'s Outline view. The outliner is delightfully intuitive (again, Aldus should license it to a few word processor vendors), and it's easy to rearrange your thoughts by simply moving them around on the screen. Each new topic header is assigned to its own slide as it's generated.

In the Slide view, you can choose from a variety of formatting templates, or create your own layout. Text is automatically arranged on its assigned slide, but you can change the way it looks by selecting and moving the blocks around. Likewise, you can import graphics in PICT or EPSF formats, resize them (proportionally or otherwise) by manipulating their handles, and easily move them to the desired location.

Clip art collections and the like can be a real timesaver here for backgrounds and graphic elements. *Persuasion* includes a generous allotment of clip art files, and more are available from other vendors—the marble background for the Carved In Stone presentation was one of those included with *Studio/8*, a spectacular painting and illustration program from Electronic Arts.

Once you've got your information on the proper slides, choose the Slide Sorter view, which allows you to see small versions of all your slides and move them into the desired order. Then run the slide show to double-check that everything works just exactly perfect, and output your presentation. Or save it to disk and send it off to the service bureau. Or modem it over.

## A Surprise Or Two…

While *Persuasion* is nearly toaster-like in its ease of use, you may run into the occasional frustration as you discover the brave new world of color graphics on the Macintosh. Sometimes the transition from one file format to another produces some puzzling effects, which I encountered in creating the rose slides.

The original graphics file was downloaded from a software library in .GIF format. Both *Giffer* and *VisionLab* will convert .GIF to PICT; *VisionLab* also can convert it to EPSF.

*Studio/8* opened the PICT file without difficulty and without loss of detail, retaining the custom color palette in the file. However, when I imported the PICT graphic from *Studio/8* into *Persuasion*, the colors reverted to the default Apple palette, with great loss of quality. Importing the same file directly from *VisionLab* in PICT and EPSF produced the same image. Other *Studio/8* files with custom palettes made the transition with colors intact. (*Persuasion* will let you customize its color palette according to your needs, but there seems to be no graceful way to save/export a custom palette from *Studio/8* and no efficient way to import existing custom palettes into *Persuasion*. Both products would be immeasurably enhanced by the addition of such a feature, to say nothing of CYMB color separation capability. *Persuasion*'s manual suggests that actual output will reflect the palette in the original file rather than the display on the monitor; however, in a medium like film where there's an inevitable delay between design and final output, something a bit closer to true WYSIWYG would be desirable.)

## Conclusions

For the time being, making good use of *Persuasion* requires a significant investment in hardware and/or third-party services. Agencies that specialize in the creation of slide presentations would benefit by using it, as would large companies with frequent meetings. Academic departments might consider investing in a copy for lectures and class handouts.

Further, since the program and the equipment it requires are probably out of the economic reach of the occasional user, who might benefit enormously by access to such a tool, it would probably be a very good idea for laser parlors and other Mac-by-the-hour establishments to install a copy on a color Mac workstation—few programs do such a good job of allowing the non-expert to do quality work quickly and easily. ■

## Resources:

*Persuasion*
List price $495
Aldus Corporation
411 First Avenue South
Seattle, WA 98104
206/622-5500

*Studio/8*
List price $495
Electronic Arts
1820 Gateway Drive
San Mateo, CA 94404
(415)571-7171

*VisionLab* and *Giffer* are available from many BBS systems and user groups, including BMUG.

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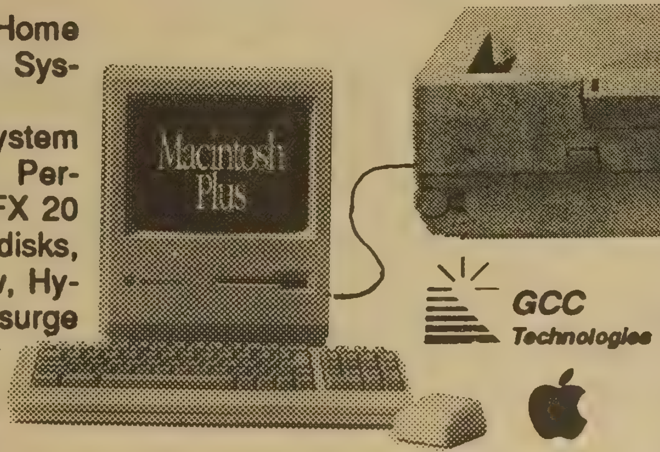

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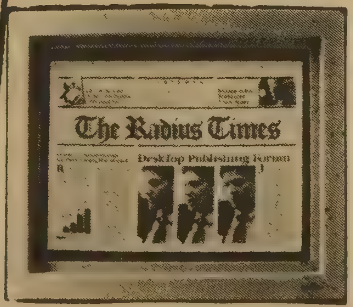

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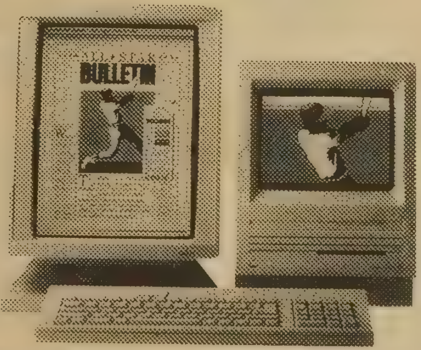

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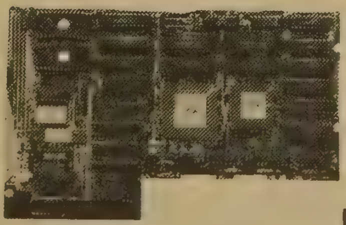

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MAC @ WORK

# BMUG

BY DAVID MORGENSTERN

# BMUG On The Show Circuit

BMUG spans the globe this month with reports from Mac fairs around the world. The news is a disk shaking, byte bending adventure. Intrigue and gore are working their way off the pages onto your fingers—or is that your lunch?

## No Mac Is An Island

April was Mac month this year, and most publishers and marketing representatives thought there was too much (or too little) of a good thing. There were Macintosh shows in Chicago (MacDex), New York (Macintosh Business Conference), Amsterdam (MacWorld Europe), Washington (Macworld Expo), and New Jersey (Macintosh as a Research Tool Conference). The Mac was also represented at industry shows in Hannover, Germany (CeBIT), Philadelphia (National Computer Graphics Association), and San Francisco (Seybold Seminar). Holy frequent-flyer mileage, MacMan!

The two super-hyped shows, MacDex and Washington Expo, were not monster hits. The Chicago show, called by the attendees *the Apple ghetto,* was a disaster—only the faithful came. The Expo did much better, but only half the convention center was used.

Some of the big player companies didn't even bother with booths at the DC show. They took residence in hospitality suites across the street in the Hyatt Hotel. This must have been a MacFantasy Island—the hotel has three floors below ground, with lagoons, waterfalls, colored lights, and floating live piano. Here are some highlights (it's slim pickings):

- The hit of the Expo was the BMUG T-Shirt, tie-dye edition. It was one of the few offerings at DC that wasn't trying to out-corporate, out-bureaucratize its neighbor. A second edition is in the works if you missed your chance in April.
- Apple announced an external version of its 1.4 Mb SuperDrive for Mac IIcx and SE/30 flavored Macs. The big news is that Apple is going to "co-market" the *DOS Mounter* INIT, created by Dayna Communications. This software lets your Mac use DOS floppies without having to use the brain-dead *Apple File Exchange* program.
- Hardware hounds were drooling over the Telfax Model RA210 by the Relisys Company. It is a stand-alone fax machine that also plugs into your Macintosh. Incoming faxes can be sent to your Mac, the Telfax, or both. It also can be used as a 200-dpi scanner or printer! If only it shredded documents too.

## Man Bytes Dog

The weekly BMUG meeting is filled with great plays, in spite of the treacherous blowing windbags. Developers hope for a home run, while the peanut gallery hopes for some good BASICs. We always make sure the Mac is grounded out and off the disabled list.

### Upcoming Events

**June 15:** Chris Crawford (famous game author) and Monogram *Business Sense.*

**June 22:** Electronic Arts *Studio One,* MedLine *Knowledge Finder,* Andros Software *SewSoft* (CAD for clothes).

**June 29:** Agfa Compugraphics (DTP), 3Com (network stuff).
**July 6:** Jean-Louis Gassee, Apple Products President.
**July 13:** To Be Announced.
**July 20:** Dantz Development *Retrospect* (backup stuff).
**July 27:** Mediagenic *Manhole II.*

**Call the BMUG HelpLine about attending our new monthly BMUG West meetings in San Francisco!**

- The best panel award goes to *Computers and Ethics* —it's no joke! It was moderated by Peter Black, President of Xiphias, a CD-ROM publisher, and the speakers included an *ABC News* executive producer, a networking expert, and a computer literate rabbi. Perhaps we'll see this repeated at every Expo (hint-hint).
- The best party was sponsored by the Pentagon and NASA User Groups, held in the Smithsonian Air and Space Museum. Many parties ran out of food in the first quarter of an hour. The BMUG road crew's food budget was ruined by this party parsimony.
- The Jasmine Technologies press conference was a disaster. It was held across from an undertakers' convention and the microphone was giving up the ghost. Dennis Chang, Jasmine's boss, talked the whole time about the company's reorganization and legal difficulties—not its new digital audio tape (DAT) drives for the Mac. The $7,000 drive will store 1.2 gigabytes (a lot) on one cassette. You can back up a 20 Mb hard disk in just a few minutes. Maybe it was the embalmy weather.
- John Sculley gave another rendition of his 1989 Show Speech and HyperTV Dog and Pony Demo. Practice makes perfect. He said, "We can play in a standards world, but we do it in a way that is very Apple." Huh? Is this a boast or a confession?
- A funny thing happened at the Hannover Mac Faire. The Apple booth had a display of Macintosh logic boards. A hard-headed person was looking at the candy in the window and saw something new. It had the look and feel of a Macintosh laptop board. It had definitely been manufactured in Apple's Ireland factory. It disappeared quickly into the back of the booth.

If you're planning next year's calendar, here's some news. The next San Francisco Macworld Expo will not be in January. It will move to April, and don't ask if/when the DC Expo will be. The vendors apparently didn't like competing with the Super Bowl.

The date of the 1990 Boston Expo is also floating away from the summer. Everyone was tired of working in a sauna and of testing the high temperature operating conditions of their products. I'm sure the group that runs the Expos will pick some other convenient week—Jewish New Year or the World Series.

## One Good Word

Most BMUG meetings have questions about printers, viruses, and word processors. *Word 4.0* and its place in heaven (or the other place) have been debated since beta testers started dropping hints a year ago. It's almost a Civil War psycho-drama, with the family split into the *Word, MacWrite II, WriteNow,* and *Everyone Else* Camps.

Among *Word 4.0*'s best features are the **Commands** under the **Edit** menu. You can select the functions and features you want from a list of 255. All the command-key equivalents and menu items can be modified to fit your working style and needs.

One of the 255 commands is *Screen Test.* It is a screen saver, like the shareware *Moire,* but the background color is selectable (if you have a color machine). Probably the reason *Word 4.0's* release was delayed for six months.

*Word 3.0* and *4.0* allow you to insert special

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*PostScript* commands into your document when printing on a LaserWriter printer. Here's a way to make sure draft copies aren't mistaken for the finished product.

Open your header and type in the following text exactly:

```
.page.
/Times-Bold findfont 100 scalefont setfont
wp$x 2.8 div wp$y 3.5 div translate
0 setlinewidth
52.3 rotate 0 0 moveto (D R A F T) true charpath
gsave .95 setgray fill grestore stroke
```

Now select the text and press **Control-Shift S** to get into the style definition mode. Type the word POSTSCRIPT and press **Return**. Finally Close and save the header. Now the word DRAFT will appear in large outlined letters across every page.

> **The next San Francisco Macworld Expo will not be in January. It will move to April, and don't ask if/when the DC Expo will be. The vendors apparently didn't like competing with the Super Bowl.**

## The Poor Relation

Last year, Apple came out with a new family of LaserWriters—the LaserWriter IIs. The three cousins are the LaserWriter II NT, NTX, and SC.

At the bottom of the LW II clan is the LaserWriter II SC. It was hailed as a "new direction" for Apple's laser printing marketing strategy. Some new direction—buy this one if you don't have much money.

Although the LW II SC looks just like the higher-priced spread, it's much different. Apple hopes you'll come into some dough and will take advantage of the many upgrades available for the series.

The LaserWriter II SC is not a PostScript printer. It can't perform all the wonderful graphic tricks that we're used to from our PostScript-wise graphic and layout software. But you can buy the upgrade...$.

It also can not be shared by more than one Macintosh on a network. The SC comes from the SCSI (Small Computer Systems Interface) port that connects the Mac and the printer. But you can buy the upgrade...$.

If you're a LaserWriter II SC owner, or thinking of purchasing one, here are some tips:

- **Buy the correct cable.** The LaserWriter II SC seems to give computer sales staff myopia. They think the only hardware combination possible with the SC is a Mac SE with an internal hard disk. Most sales persons will give you the standard cable (M0206) out of habit—not even asking if you have an external hard disk.

  If you have an external SCSI hard disk you will need a different cable—most likely the Apple SCSI Peripheral Interface Cable, MO207. Some SCSI devices have different connectors than others. Most Mac drives use a 25-pin connector, while others use a 50-pin plug. To make sure you get the correct cable combination for your drive and printer, bring the drive and its cable to the store and try it out.
- **Think Four.** The LaserWriter SC doesn't use outline or PostScript fonts (OK, System 7.0 will offer Apple Outline fonts—it's a year away and we have to buy today). It looks at larger sizes of bitmap fonts (the ones you install in your system file) and squeezes them down to size. The LW SC needs installed fonts **four times larger** to print in an acceptable quality. Make sure any special fonts you need come in 48, 56, and larger points.
- **It's not broken.** When you turn on a PostScript LaserWriter, it spits out a fancy test page. With the LW SC you can wait all day for the test, but it won't come. It's not broken, just tightfisted. To get the test, the LaserWriter SC must have its *SCSI ID* set to 7. Each SCSI device must have a different ID number. The Mac's is always 7, so if you must check the test page, turn your Mac off. Be sure to reset the LW SC number when you're done fooling around.
- **It's not broken II.** When you select a PostScript LaserWriter in the Chooser (by clicking its icon in the left hand box), a printer name usually appears in the right hand box. Don't expect the LaserWriter II SC to give you its name. It's not broken, just shy.
- **The maximum length of a SCSI chain is 18.7 feet.** SCSI devices can be connected together in a *chain.* The combined length of all the cables can not exceed 18.7 feet.

## Shareware Spotlight

Macintosh software programs have *flags* that tell the Finder their identity. This lets us view programs and files by type.

Application programs have additional information that allows them to have their own icon and assign icons to documents and related files. This code is stored in the *BNDL resource.* Software with this resource are marked by having their *Bundle bits* equal to 1, or *set.*

Unfortunately, there have been programs that incorrectly set the bundle bits of documents they create. The most pesky recent example was the first release of *FullWrite Professional,* in which the bundle bit on the Thesaurus was set.

The outcome of a set-bit document is serious. When you double-click on a document, your Mac opens (or tries to open) the application that created that document. The *FullWrite* documents tried to open the "application" Thesaurus, thinking the Thesaurus was its creating application. Users discovered a big difference in performance between the real program and the pantomime program. KaBoom!

*BundAid,* written by Jim Hamilton, scans a disk and makes sure that each file whose bundle bit is set, actually has a BNDL resource. If it does not, the bundle bit will correctly be cleared to 0.

*BundAid* and a lot of other goodies are on BMUG *Utilities 11* disk. ■

# What is BMUG?

BMUG is a non-profit educational corporation, promoting the exchange of information. Like any growing organization, it is many different things to its 6,500+ international membership. BMUG, Inc. is a computer user group located in Berkeley, California. The group specializes in computers using a graphical interface. For a while that meant the Apple Macintosh but now includes other makes, models, and operating systems, including the NeXT best thing. BMUG supports many Special Interest Groups (SIGs), a eight-line Bulletin Board System (BBS), free HelpLine, software library, weekly meetings, and much more. BMUG also puts out a semi-annual 400+ page book that we call our "newsletter."

Our motto continues to be: *We're in the business of giving away information.*

Come and join in the dialogue at the BMUG main meeting every Thursday evening, 6:00 to 9:00 (or whenever we finish), in the Physical Sciences Lecture Hall on the U. C. campus.

The BMUG HelpLine, (415)849-HELP, and our fax number, (415)849-9026, provide technical assistance and telephonic hand-holding during business hours (10:00 a.m.—5:30 p.m.). If your question can't be answered on the spot, we try get you in touch with someone who can help. Of course, not every problem can have a happy ending — but we try.

BMUG has one of the most up-to-date, comprehensive software libraries around with 350+ double-sided disks filled with the latest versions of public domain or shareware programs and HyperCard stacks. New disks are unveiled almost every week at the Thursday general meeting. BMUG also brings you the *PD ROM*™, our entire library and more on CD-ROM—according to Apple it's the best selling CD-ROM!

Our BBS offers many of the latest versions of files in our software library as well as news, private mail, rumors, etc. The BMUG BBS is part of the worldwide EchoMac Network on FIDOnet (161/444); by calling a local FIDOnet BBS in your area, you would then be able to get in touch with us wherever you are as well as send mail to users everywhere! BMUG is now a part of the international USENET network (apple!bmug!user.name@sun.com) or (user.name@BMUG.FIDONET.ORG). With our multi-line capability you are now able to have access to BMUG almost 24 hours a day. It's easy to use, fun, and a great resource.

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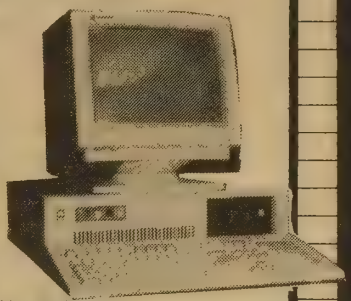

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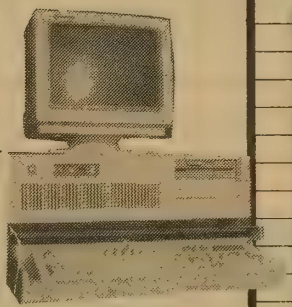

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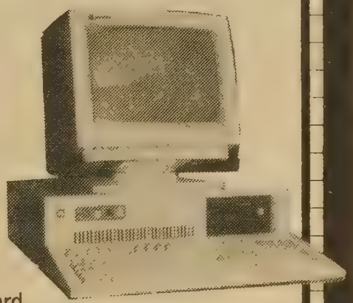

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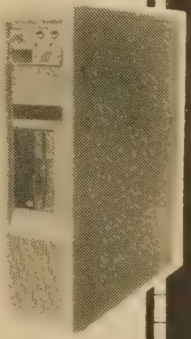

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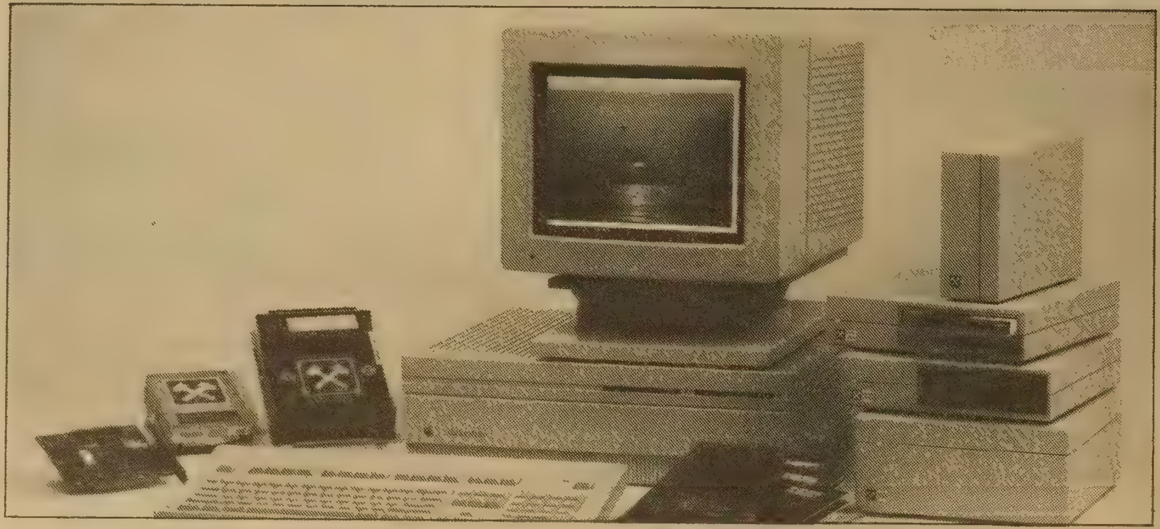

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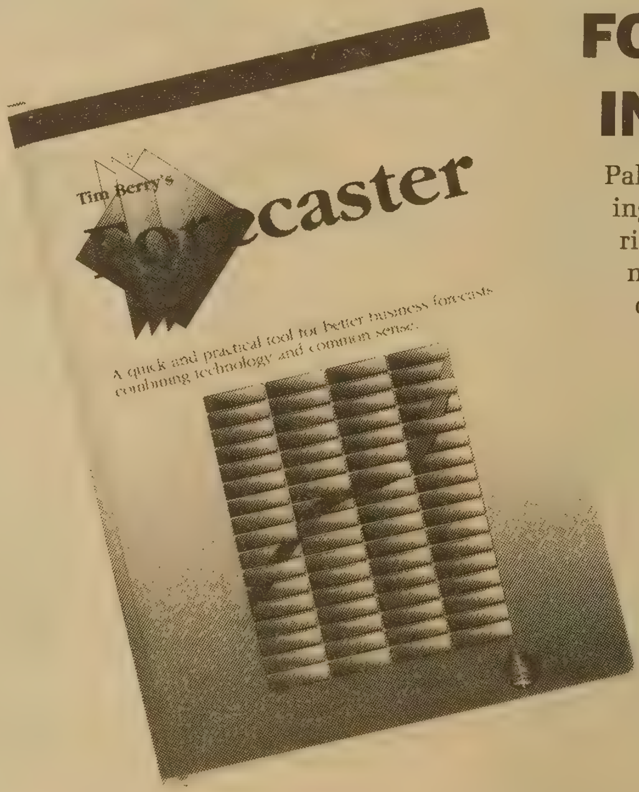
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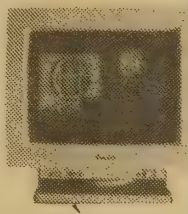

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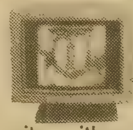

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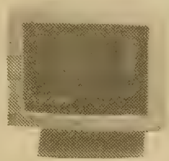

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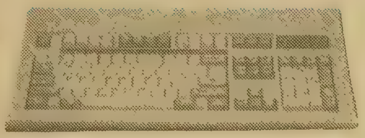

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# UNIX

**BY BENNETT FALK**

# The Joy Of X

## The Old Curmudgeon Explains MIT's Windowing Interface

"Pipe down, will ya, bub? There's ladies present!" the Old Curmudgeon barked over his shoulder. Behind him a warehouse manager was shouting obscenities and incomprehensible instructions into a cellular phone. He looked up with a scowl, but the Curmudgeon had already turned back tohis lunch companion, a pleasant brunette named Edna with a shy smile and sensible shoes. It was lunchtime at Rodoni's.

Looking into his half-empty beer glass, the Curmudgeon spoke: "Life used to be so simple: you sat down at a terminal, it didn't have to be fancy, it could even be a teletypewriter, a true tee-tee-why. You typed in your login name and your password and UNIX gave you a shell prompt. When you issued commands, the computer at your fingertips ran 'em and printed the output on your terminal. With nothing more than a terminal and a keyboard, you were in control. What could be better, eh?"

"I don't know, Mr. C.," Edna responded uneasily, "Maybe a Macintosh?"

The Curmudgeon snorted. "Yeah, maybe so. But's that not how things worked out. After a while there were too many users for one machine, and they had to buy another one, and then somebody strung a couple of serial cables between the two machines so folks from either machine could use the 'cu' program to log in to the other one and do stuff. And that was nice, too, but the serial lines were kind of slow, and only one person at a time could log in to the other machine. And when we had to get a third machine, they had to rethink everything, and went out and got Ethernet cables and some fancy network software for the whole shebang."

"Oh, dear." Edna's forehead wrinkled. She was opposed to drugs, and there was a suspicious, narcotic ring to the word "Ethernet."

"Well, once that Ethernet stuff was in place, we could log in on one machine, do some work, then do a 'remote' login to either of the other machines and do stuff. And anybody could do a remote login to any of those machines at any time."

"Well, that's nice."

"Of course we still had these simple-minded terminals, so no matter how many computers we could rlogin to, we could still only work with one of 'em interactively. At least, that's how it was until somebody got one o' them workstations."

"Workstations?"

"Workstations. The modern workstation is quite a production: it's got its own memory and CPU, an Ethernet connection, about a 19-inch bit-mapped screen and a three-button mouse. It's also real likely to have *no* disks of its own: the disk it uses is actually on one of the other machines and is, as they say, 'remotely mounted' by the workstation over the network."

"I see," said Edna, who didn't.

"With all that high-tech display stuff on the workstation, we also got a nice graphical user interface with windows and fonts and whatnot. And the guy that had that workstation on his desk could click his little mouse and open up windows and run a program in each one. If, by chance, the programs had been built to use the graphical interface that ran on his workstation, it would look pretty. But those programs took up a lot of disk space, and the 'bitmapped' version only ran on the workstation. The rest of us had to use the character-based version if there was one."

"Oh." Edna pushed at her mashed potatoes with a fork. She sculpted a higher ridge around the well of brown gravy in the middle.

"They gave the workstation to a really clever guy and he opened up a bunch of windows with a UNIX shell running in each one. Then he went from window to window and did a remote login to a different machine in each window so he could work on a bunch of machines at the same time and watch what was happening on all of them. And wasn't *that* just the cat's pajamas!"

"Mmmhmmm." Edna had a mouthful of peas and carrots.

"Except for one thing. None of those remote logins to other computers knew anything at all about his graphical user interface, so everything he did with those other machines he had to do with the old character-based user interface that the rest of us were using. That didn't seem so bad until we got a couple more workstations, and the folks that used 'em tried to login from one workstation to another and run some of the graphical software over that remote login connection, and guess what."

"I don't know. What?"

The Curmudgeon cackled triumphantly, "That didn't work at all! The graphical software wasn't written to drive display hardware across the network: it could only make calls to the graphics devices on the machine it was running on."

"Oh, my."

"Well, that was a real pain, because before long all the folks who had workstations were clamorin' for their own copies of the graphical software and bigger disks to hold all these duplicate copies. It was beginning to look like 'Workstation' just meant big, expensive personal computer."

"Like a Macintosh?" Edna chimed in.

"Or even worse," the Curmudgeon nodded, leaving the alternative to Edna's imagination. "Fortunately we weren't the only people having these problems. All around the country people were trying to figure out how to make programs run on computers in a network and how to get the most out of fancy user interface hardware. If you wanted to make this problem even harder, you could imagine that the computers on the network had different processors and different operating systems."

"Why would anybody want to make the problem harder?"

"Well, take your Institutions of Higher Learning, for example. They more or less have to have one of everything to be able to teach computer science. Because they do so much experimental stuff, workstations make good sense: if something goes wrong on a workstation, it probably won't affect anybody else. But you also need to be able to get from each workstation to the larger computers in the network, and once you're there, you don't want to tie up the larger computers with dumb stuff like controlling the video display. See?"

"Uh, yes," Edna lied again.

"They had all these problems at MIT (that's Massachusetts Institute of Technology, but don't tell 'em I told ya), and they came up with a pretty good approach to all this. They call it a 'window system', and its name is 'X', but there's a lot more to it than that."

"So it *is* like a Macintosh?"

"No, not really. When you buy a PC window system, and Macintosh is as good an example as any, you get a certain style of video display. The PC window system usually reflects a policy about what the screen should look like: do the windows use pull-down or pop-up menus, are dialogue boxes used and what do they look like, how are borders drawn around the various things on the screen, and how many clicks of which mouse button are needed to make a choice. That kind of stuff.

"But 'X' is completely different. The basic idea behind it is that you're trying to get something done on a workstation attached to a network of computers. 'X' gives you a program called a 'server' that controls the workstation's fancy display and communicates with the programs you have to use to get your work done. These programs are called

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MicroTimes, Mid-December, 1988

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'clients.'

"The server actually runs on your workstation, and you control it by typing commands on the keyboard or using a mouse of some sort. Client programs, on the other hand, don't have to be running on your workstation. They can be running anywhere on the network and still talk to the server that controls your display. The communication between clients and servers is all done through the 'X' protocol, which is basically a language that lets the client request display resources from the server without knowing anything about the operating system or the hardware where the display occurs."

The Curmudgeon took a deep gulp of beer. Edna sat with a quizzical look and finally broke the silence. "Where do clients come from?"

"What?"

"Where do clients come from? If the server is in control of your display and keyboard and all, how do client programs get started? Can the server start clients?"

"No, no, not at all. You have to start clients from the operating system like any other program."

"So, what's the point of starting up an 'X' server if there are no clients to talk to it?"

"If there really were no clients, there wouldn't be any point in starting the 'X' server. Most people start up at least one client program in the background from the operating system just before they start the server. When the server comes up, the client connects to it and puts a window on the screen. Once you've got one client running in a window with a UNIX shell, you can start other clients, but you have to start clients from the operating system. In fact, you can even start up a client that talks to a server on someone else's workstation."

"Isn't that kind of rude?"

"You'd certainly want to be discreet about it."

"Well, the whole thing sounds distasteful. I mean, what kind of programs are these clients, anyway?"

"They're all sorts of programs. Graphics programs, utilities of various kinds, database managers—there's even an 'X' adaptation of the 'hello, world' program that's used in all the programming books. What all the 'X' clients have in common is that they're built using a library called 'Xlib' that enables the program to use the 'X' protocol. No matter what the program, Xlib is always there. The functions in Xlib are very low level, and most people prefer to deal with them indirectly through a 'toolkit' that simplifies the use of Xlib. A standard toolkit named 'Xtk' is provided by MIT, but there are lots of others, like DEC's "X User Interface."

"For people who want their windows to have a certain look, there are collections of window gadgets, or 'widgets,' that sit on top of the various toolkits. The MIT people have the Athena Widgets from the original project for which 'X' was developed. Sony and DEC and Hewlett-Packard and AT&T and Sun all have their own sets of widgets to standardize the appearance of their displays."

"I'm getting dizzy."

"Here, have some water," the Curmudgeon pushed a glass of iced water across the table toward her. "Anyway, there's all kinds of furious development to put out tools to produce applications that use 'X'. But all those tools use the same Xlib and 'X' protocol. There's an 'X' consortium to kind of administer the protocol and make judgments about how well new products conform to it, and that's a good thing, because, like UNIX a long time ago, 'X' is about to make the transition from nifty educational tool to industry standard.

> **Like UNIX a long time ago, "X" is about to make the transition from nifty educational tool to industry standard.**

"You can still get a tape of all the 'X' windows source code and so forth from MIT for a nominal charge. But the general public will probably want to get 'X' servers and application-building tools for their particular workstations from their regular vendors so they can get support for later versions and the like. (Apple has an 'X' package for the A/UX on the Mac II and SCO is working on an 'X' product for XENIX.)"

"I don't know, Mr. C. This 'X' thing doesn't sound much like a windowing system."

"That's the beauty of it. 'X' gives you an architecture for distributed applications and it lets you use the graphical interface, but it doesn't force you to make everything look the same."

"Isn't that confusing? Doesn't it make the programs harder to learn?"

"Maybe so, but that's a small price to pay for having a standard."

"I don't see what's so 'standard' about it if the programs all look different."

"With 'X' everybody uses the same tools to build their displays and such, but the actual appearance of the display is left up to the programmer. There's a lot of programs already on the market that wouldn't give 'X' a second look if they had to change the way they appeared on the screen. 'X' stands a good chance of becoming a standard if it isn't too restrictive, you know."

"What's that supposed to mean?"

"Just that window appearance is too trendy a thing to standardize. The important thing is to develop a set of tools to build windows out of and port those tools to enough computers that developers don't have to start from scratch every time they set out to build a fancy interface on a new computer. In fact, the application developer can build one program that uses Xlib (or an 'X' toolkit or a set of 'X' widgets) and it will be able to use the graphical user interface on any workstation that has an 'X' server."

"This certainly seems like a lot of effort just to use a graphical user interface."

"Yeah, but it's worth it."

"Why? What do people do with all these things?"

"All sorts of useful stuff," the Curmudgeon tried to say, but he was drowned out by angry wailing behind him. The warehouse manager at the next table, cellular phone in hand, yelled threats and abuse and dire imprecations until he was red in the face. Someone had driven a forklift off the edge of the loading dock, and there would be hell to pay. ■

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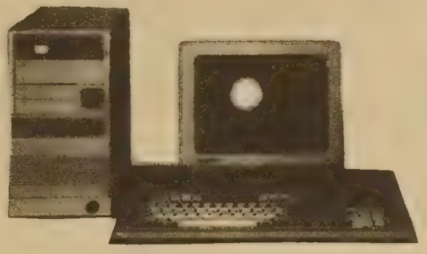

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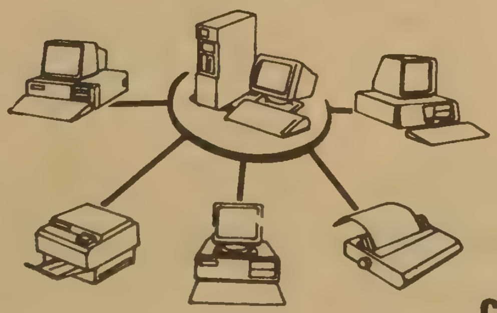

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# ATARI ST

BY DAVID HAWKINS

## Document Processing: An Embarrassment of Riches

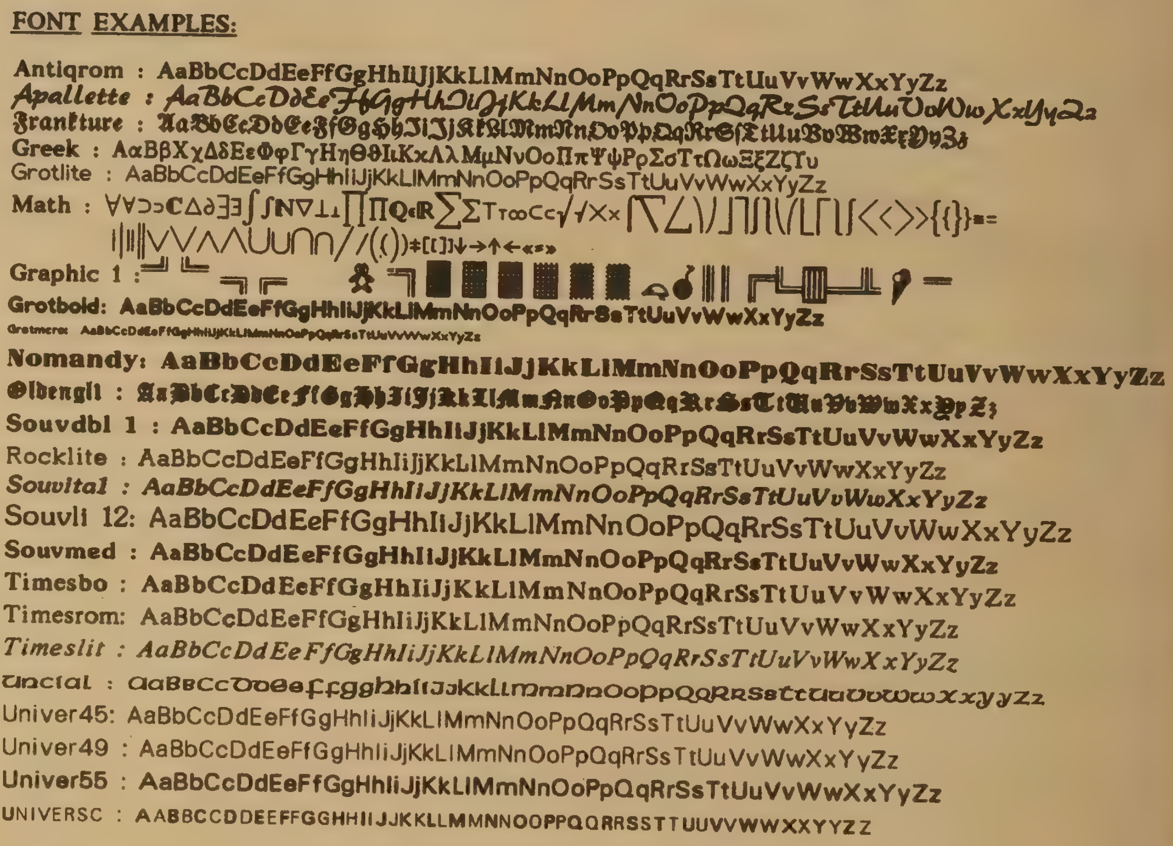
There's no problem with finding word processors for the Atari ST! There are almost too many of them out there. *WordUp*, *WordPerfect*, *First Word*, *ST Writer*, etc. provide plenty of features and cover about everything you need to do.

Personally I'm happy with *WordUp* for what I do, but here's a new one different enough that you might want to take a look at it.

### What Is Document Processing?

I've been experimenting with a copy of *Signum 2*, "The Document Processor." I picked up this copy at my local dealer, and US distribution is still being worked out. It is being distributed in Canada by Scan-Tech Business Systems, Ltd., Box 9 P.O. Sub 11, Edmonton, Alberta, Canada, T6E2G0 and the phone number is (403)446-1337.

What's different about *Signum* is that it allows you to control everything in the document down to 1/90th of an inch. You can even move the cursor in increments that small. It also allows you to import graphics, although I didn't get to test that feature. By the way, I was using *Signum* on a monochrome monitor. If you are doing serious document preparation work, use the monochrome monitor instead of the color one.



FONT EXAMPLES:

Antiqrom : AaBbCcDdEeFfGgHhIiJjKkLlMmNnOoPpQqRrSsTtUuVvWwXxYyZz
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Greek : AαBβXχΔδEεΦφΓγHηΘϑIιKκΛλMμNνOoΠπΨψPρΣσTτΩωΞξZζΥυ
Grotlite : AaBbCcDdEeFfGgHhIiJjKkLlMmNnOoPpQqRrSsTtUuVvWwXxYyZz
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Graphic 1 :
Grotbold: AaBbCcDdEeFfGgHhIiJjKkLlMmNnOoPpQqRrSsTtUuVvWwXxYyZz
Grotmcro: AaBbCcDdEeFfGgHhIiJjKkLlMmNnOoPpQqRrSsTtUuVvWwXxYyZz
Nomandy: AaBbCcDdEeFfGgHhIiJjKkLlMmNnOoPpQqRrSsTtUuVvWwXxYyZz
Oldengl : AaBbCcDdEeFfGgHhIiJjKkLlMmNnOoPpQqRrSsTtUuVvWwXxYyZz
Souvdbl 1 : AaBbCcDdEeFfGgHhIiJjKkLlMmNnOoPpQqRrSsTtUuVvWwXxYyZz
Rocklite : AaBbCcDdEeFfGgHhIiJjKkLlMmNnOoPpQqRrSsTtUuVvWwXxYyZz
Souvital : AaBbCcDdEeFfGgHhIiJjKkLlMmNnOoPpQqRrSsTtUuVvWwXxYyZz
Souvli 12: AaBbCcDdEeFfGgHhIiJjKkLlMmNnOoPpQqRrSsTtUuVvWwXxYyZz
Souvmed : AaBbCcDdEeFfGgHhIiJjKkLlMmNnOoPpQqRrSsTtUuVvWwXxYyZz
Timesbo : AaBbCcDdEeFfGgHhIiJjKkLlMmNnOoPpQqRrSsTtUuVvWwXxYyZz
Timesrom: AaBbCcDdEeFfGgHhIiJjKkLlMmNnOoPpQqRrSsTtUuVvWwXxYyZz
Timeslit : AaBbCcDdEeFfGgHhIiJjKkLlMmNnOoPpQqRrSsTtUuVvWwXxYyZz
Uncial : AaBbCcDdEeFfGgHhIiJjKkLlMmNnOoPpQqRrSsTtUuVvWwXxYyZz
Univer45: AaBbCcDdEeFfGgHhIiJjKkLlMmNnOoPpQqRrSsTtUuVvWwXxYyZz
Univer49 : AaBbCcDdEeFfGgHhIiJjKkLlMmNnOoPpQqRrSsTtUuVvWwXxYyZz
Univer55 : AaBbCcDdEeFfGgHhIiJjKkLlMmNnOoPpQqRrSsTtUuVvWwXxYyZz
UNIVERSC : AABBCCDDEEFFGGHHIIJJKKLLMMNNOOPPQQRRSSTTUUVVWWXXYYZZ

**Signum offers sophisticated document processing power and quality output.**

### Fonts

*Signum*'s font handling is the most advanced I've seen. Each font (which I think of as a typeface or character set) can be edited and changed according to what you want to do. You can use up to seven fonts in one document, with three of them being relatively easy to get to. (Personally I doubt that I'd ever use more than four fonts in any document. It would be great for showing off, but would probably not look so good.)

When you start up *Signum* you load your first font. That's the one that will appear on the screen when you type with the normal keyboard. You can then add two more fonts. One of those will appear on the screen when you type using the Alternate key; the other appears when you type using the Control key.

### Using Menus

Like most ST word processing programs, you can then work with the document using options from pull-down menus. This allows you do change options, change fonts, do search-and-replace operations, etc. You can also do these things directly through the keyboard. Since the Control and Alternate keys are used for the fonts, you have to use the ESC key and then a command sequence to make other changes. This can be handy after you get to know the program well and you don't want to be bothered with reaching for the mouse to make a quick change.

### The Manual

Unfortunately there seems to be a growing problem with software—the programs are so powerful ("full featured"), and the manuals are so poor at explaining those features. *Signum* is one of those programs. There were some commands that I wasn't able to get to work, and I'm sure it was because the manual didn't explain them very well.

What the *Signum* manual needs is files showing examples of its features on disk. I wasn't able to type in the manual examples and get them to match what the manual said they should be. Since they did the manual using *Signum*, I know that *Signum* works, but if they'd included samples from the manual document it would have been easier to try.

### Graphics

I ran into the same problem with graphics—I could find no example of a graphics image that I could include with the document. They didn't have one on disk, and I didn't have one on any of my disks. So I wasn't able to test that feature. They use graphics in the manual and it would have been easy to have put one of the examples on the disk.

### Results

I was impressed with the control *Signum* gave me over the document. The fonts are impressive and the printing is amazing. The output on a 24-pin dot matrix printer is incredible. I created a 26-page document and was able to move around in it very fast. I like being able to edit my own fonts and might try generating a Hebrew set in the next week. It does include the ability to type from right to left, which can be handy if you're entering a Hebrew document. For documents that involve several different languages, *Signum* is the best program I've seen.

Another nice feature: *Signum* is usable on a 1040 ST even if you don't have a hard disk. I wasn't able to test it on a 520, but would expect some problems with limited memory there.

On the negative side, *Signum* isn't easy to learn. An improved manual with included samples would be a great help. *Signum* is a way of life—you'd need to immerse yourself in the program for a while to feel comfortable with it. My advice for the *Signum* people: improve your manual and you've got a winner here! ■

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*Copyright © 1989 by David Hawkins. All rights reserved.* *David Hawkins is the host of the Atari conference on The WELL (415/332-6106); send email to dhawk. He has one of the first Atari ST 1040s sold in San Francisco, both monitors, an Okimate 20 color printer, and disks all over the room.*

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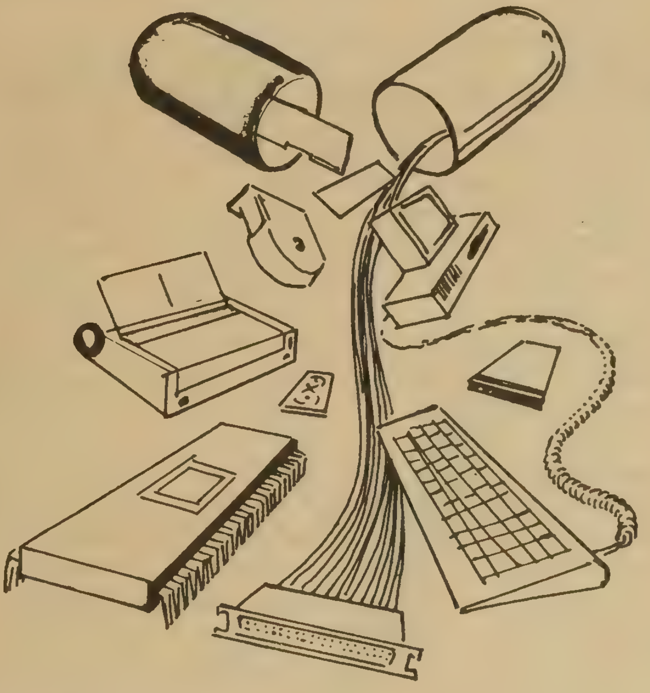

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# APPLE II

BY MIKE MARKOWITZ

# Video Card For The II, Plus GS Battery Woes

Encouraging evidence that the Apple II isn't quite dead yet arrived on April 3 with the announcement of the Apple II Video Overlay Card. Video overlay, or "genlock", has been around for several years on MS-DOS, Amiga, and other systems. It consists of circuitry that takes the incoming signal from a videotape, videodisc, or camera, and mixes it with the computer's own "native" video output, on the same monitor. The resulting image can be recorded onto another VCR, or even broadcast as a standard NTSC video signal.

Interactive videodisc is one of the hottest new educational technologies. Imagine a video of a malfunctioning engine, with computer-generated graphics superimposed to highlight possibly faulty parts. Depending on the student's selection from a menu of suggested repairs, the program could branch immediately to a video segment of a smoothly purring engine, or a segment showing an explosion. It is a powerful instructional technique that requires a lot of time, money, and skill to implement effectively. It sells a lot better than it works—a familiar theme in high-tech marketing.

In any case, the lack of a standardized low-cost, interactive video solution has helped to erode the Apple II's position at the leading edge of K-12 computer-aided instruction. Release of the Apple Video Overlay Card with its supporting *VideoMix* software can be seen as a defensive move, particularly against the Amiga and the low-end PS/2 systems (IBM has been aggressively promoting interactive video).

With a suggested retail price of $549, the card will not attract many home video hobbyists. It works with either a IIGS (512 K) or an enhanced IIe (128 K) in a regular slot, and with either the AppleColor RGB monitor or a composite color monitor. According to Apple's press release, the card "produces high-quality video output, and improves the display on both the Apple IIe and the IIGS." It was not immediately clear what this might mean. Earlier freeze-frame video digitizers, such as the discontinued AST VisionPlus card, produced relatively fuzzy images.

Like most Apple cards, it is beautifully designed (judging from the photo in the press release), with surface-mount VLSI (very large-scale integration) chips. One small 8-pin chip is socketed—presumably an EPROM. Two of the big VLSI chips have "Apple 86" copyright labels, suggesting that they are custom-made, and also that this design has been languishing in the R&D labs for some time. There is a 14-pin connector at one end, and a 16-pin connector at the other. There is also a mysterious three-pin Molex connector, and several items that look like trim pots (for factory adjustment).

*Copyright © 1989 by Mike Markowitz. All rights reserved. Mike Markowitz is a computer engineer for a large Southern California aerospace firm. He has been writing about Apple II computers since 1984. You can reach him on AppleLink (MOUSEKOWITZ) or The Source (SIG 060).*

The *VideoMix* software works on the IIGS as a desk accessory and on the IIe as a separate application. The program provides "easy control for mixing video and computer graphics" and "enables the user to adjust the tint and color of the video image which appears on an RGB monitor." Several third-party hardware and software products supporting the Apple Video Overlay card were announced simultaneously. They included a $289 synchronizer to record audio cues onto video or audio tape (Whitney Educational Services, PO Box 25371, San Mateo, CA 94402, (415)341-5818).

Due to the high cost of videodisc hardware, it is unlikely that schools will be able to put interactive video on every desk, or even in every classroom. About 9% of US public schools owned videodisc players in 1988, but about 90% owned at least one VCR. Creative teachers and students should be able to do some great things with the Apple Video Overlay Card, and that will be a good omen for the future of the Apple II.

**The Apple II Video Overlay Card takes the incoming signal from a videotape, videodisc, or camera, and mixes it with the computer's own "native" video output, on the same monitor. The resulting image can be recorded onto another VCR, or even broadcast as a standard NTSC video signal.**

## So Your Battery Just Died?

When the Apple IIGS was released in September 1986, the lithium battery on the motherboard was expected to last five or ten years. It provides the trickle of current needed by the system clock, and also to keep alive the "parameter RAM," 256 bytes of memory where your Control Panel settings and preferences are stored.

According to reports reverberating around the Apple II bulletin boards, these batteries are starting to fail after two and a half years. This would not be a problem, except that Apple soldered the battery in place. Lithium batteries are considered hazardous waste. They can explode on contact with water. Children and pets have been seriously hurt by swallowing these nasty little items. As a socially responsible company, Apple soldered the battery in place so that, when it died, you would have to bring the computer back to an authorized dealer. The dealer replaces the batteries and ships the dead ones back to Apple for safe disposal. The Macintosh II works the same way.

As with other matters, there's a bit of a gap between theory and practice. Here's Apple's official position (downloaded from Headquarters at AppleLink Personal Edition on 4/4/89):

"If you do require a new battery, it will need to be installed by the technician at your dealership...Since this is a labor-intensive service procedure, I cannot provide you with a ball-park price, as dealers set their own pricing for service."

Some dealers have tried to charge IIGS owners as much as $200 (the cost of a complete motherboard swap); other dealers are charging $30 to $50 for this "labor-intensive service procedure" that takes a soldering iron and about five minutes.

While it's possible to jury-rig your own battery with parts available at any Radio Shack, this alteration might (theoretically) void the owner's right to any future motherboard upgrade. Warranty, obviously, is no longer an issue for a three-year old computer.

With the design of the new Macintosh IIcx, Apple has apparently abandoned the idea of soldered-in batteries as a lost cause. The IIcx logic board sports a snap-in battery. It should not exceed the capabilities of a $5 billion corporation to come up with a similar solution for the next (and maybe last) member of the IIGS family.

Meanwhile, Apple should provide a low-tech snap-in retrofit kit for present IIGS owners. It shouldn't even be necessary to remove the dead battery—just bridge around it. ■

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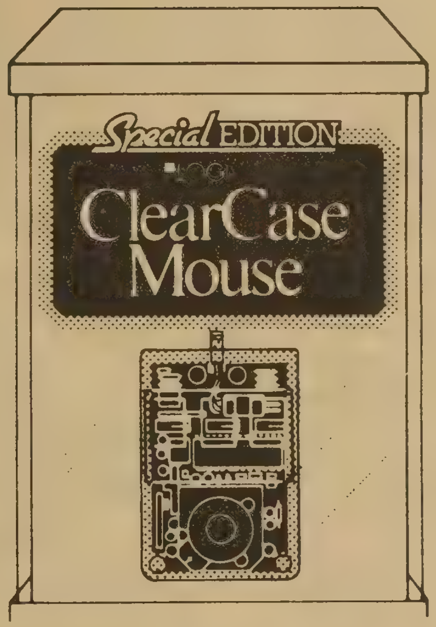

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# AMIGA

**BY MATTHEW LEEDS**

# The Zig Zag Shuffle

Last month I mentioned that WordPerfect Corp. was pleased with its Amiga sales, and was in beta test on its spreadsheet product, *PlanPerfect*. It turns out I was half right—*PlanPerfect* was in beta test. However, it turns out that WP was not at all pleased with its Amiga product sales. In fact they were so displeased with sales that at the beginning of May they cancelled all new product development for the Amiga and transferred all but two programmers to other projects, with only a commitment to "product maintenance" (read bug fixes) on current Amiga products.

The reasons cited for this move were described as "based largely on monetary considerations." In fact, a detailed list of reasons was given:

1. *WP* does not show fonts on screen.
2. *WP* does not support graphics on screen or in a document.
3. *WP* is priced too high for the market.
4. *WP* has too many bugs.

All of these were and are true, although planned product maintenance upgrades should have taken care of the bugs. Doing so, of course, would not have addressed the first three issues, nor would they have addressed what many people, including myself, feel are design flaws in the current product.

During the first week of May there was a lot of discussion in the Amiga community regarding WP's decision to abandon the Amiga market. Some people felt that this spelled the end of the Amiga, as it showed that no major developer could make a profit on Amiga products. Others felt that it proved that only products developed specifically for the Amiga could succeed, and that this was proof.

Some claimed that WP's products were so bug-ridden and poorly designed relative to other Amiga products that they were doomed to fail, and were only surprised that it had taken so long, while some just hoped that the next bug fix would finally solve their particular problem.

All of this became moot the next week, as WP changed its mind again, and decided to commit to continued Amiga product development. A total of three programmers will work on maintenance upgrades to Version 4.1 and *Library*, and also work on a future version of *WordPerfect*. No word on what happened to *PlanPerfect*.

Plans for the next version include: 4.2 file format, print preview, sorting, embedded comments, ARexx support, non-interactive spell checking, and better scroll bar support.

The apparent reason for the turnaround was the tremendous public outcry over WordPerfect's decision to abandon the Amiga. Hard to imagine that the public's response could have changed the financial bottom line as far as sales were concerned, but it's nice to see that perhaps other concerns were considered.

## In Other News...

A few months ago I mentioned that I am now using Macs and DOS machines at work. I'm also seeing a lot of Mac and DOS magazines. One item caught my eye in an article by Rick Doherty in *Macintosh Business*. "Indeed, it is rare now for a software vendor not to include code that looks for a math co-processor in a Mac, and then takes advantage of its faster calculation speed." Ah, if that were only true on the Amiga. Of course things are different in the Mac environment, as all of the new machines since March of '87 have had math co-processors built in. But then only the 2500 can directly support a math chip, and the installed base of 2500s is still small.

On the other hand, Mac enthusiasts make much of the Mac's DTP capabilities. They should take a look at the 24-bit color separations being created on the Amiga using the ASDG RESEP and *Professional Page*. ASDG markets Professional ScanLab, a hardware/software combination that interfaces an Amiga 2000 to a Sharp color scanner. The Sharp scanners can create images at 300 DPI and 24 bits (16.7 million colors). RESEP links the 24-bit separations into *ProPage* at the time the page is output as a PostScript file.

ASDG has also released a dual-port serial board for the Amiga 2000. This adds two RS-232 ports that can be used to support additional printers, modems, or MIDI adapters. Included with the serial board is software to drive the serial ports and to support calling the correct port within applications.

Imagine buying a new car that came with a radio, and then tearing that radio out to replace it with a better one, one with better sound, a cassette player, more power. Makes sense, doesn't it? Sure it costs a little more, and you're stuck with a radio you can't use or sell, but you appreciate quality sound so the expense is worth it.

Every Amiga comes with a mouse. Think of it like that radio. If you could get a better mouse, one that was lighter, more responsive, handled better, was more accurate, and offered additional features, would you buy it. After all, a mouse is a mouse, right?

Wrong. Not all mice are created equal. Once you've used a better mouse, it's hard to go back. Dale Luck and Boing!, Inc. have a better mouse for the Amiga. It's called, of course, the Boing! mouse. The Boing! mouse is a three button optical mouse. It's much lighter and easier to use than the stock Amiga mouse, and the tactile feedback from the buttons is superior. The middle button can be used like the shift key to do extended selection of icons from Workbench. Highly recommended.

There is a bug fix upgrade to AmigaDOS 1.3 in the works, and it may be available by the time you read this. Important changes include an improved FastFileSystem, new SetPatch, new Mount command, improved handlers, and new serial and printer devices. The new SetPatch fixes a nasty bug in the trackdisk.device that used to bite people during disk formats. The format command itself has undergone fixes and improvements as well. No word yet on how this upgrade will be distributed, but I'd guess it will be posted to various networks and will soon find its way to user groups and dealers. Make certain that you get the *final* release of the upgrade and not an interim release that went to developers for beta testing as that version still had some problems.

**WP was not at all pleased with its Amiga product sales. In fact they were so displeased with sales that at the beginning of May they cancelled all new product development for the Amiga.**

Freely distributable program of the month is *DiskSalve* by Dave Haynie. This is the program you wish *DiskDoctor* was. If you run into problems with trashed disks, floppy or hard, this is the cure. Latest version is 1.4, available on networks and through user groups and PD disk collections. ■

**ASDG**
925 Stewart Street
Madison, WI 53713

**Boing!, Inc.**
1881 Ellwell Drive
Milpitas, CA 95035

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*Matthew Leeds has been involved in the high tech field since he blew up his bedroom playing with a children's chemistry kit. He has been using Commodore computers since 1982 and has a strong interest in photography, video, graphics, and related fields.*

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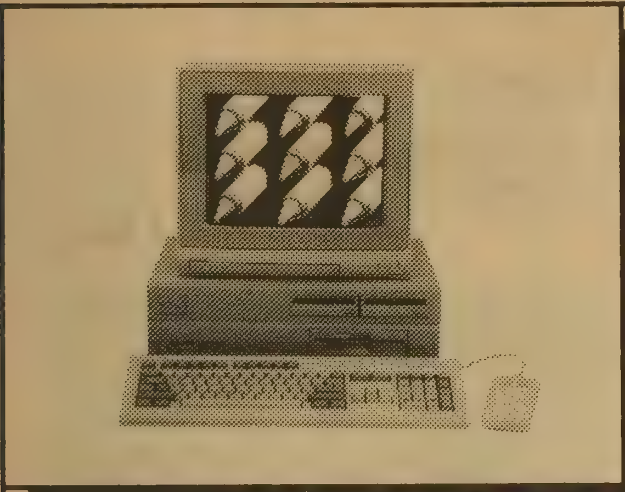

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AMIGA

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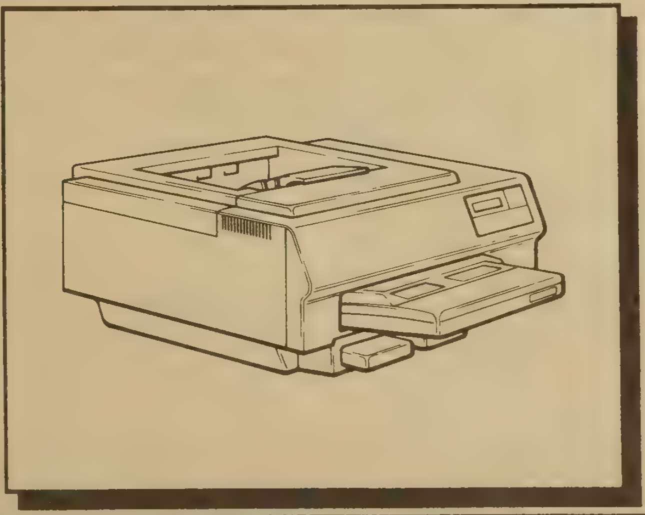

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# *USER GROUP NETWORK*

## *BY MARY EISENHART*

The mailbag's bulging this month, so let's dive right in...

Using the fax to get this information to you under the deadline wire, **Richard Katz** of the **UCLA PC Users Group** announces that the group will be having a special meeting on June 13th to discuss Personal Information Managers. Five PIM vendors will be on hand to discuss their products: *Agenda*, *AskSam*, *GrandView*, *Packrat*, and *Info-XL*. In addition to the formal presentations, there will be ample opportunity for the audience to address questions both to the company reps and "user advocates" who will be on hand for the occasion. "Our intention," Richard says, "is to give our audience an overview of a very diverse software area."

This meeting will be held at 7 pm on June 13th, in the NPI auditorium on the UCLA campus. The general meeting is free and open to the public. For more information call (213)650-4700.

Toshiba laptop owners rejoice—now there's a user group just for you in Orange County. Meetings of **TLUG**, the **Toshiba Laptop Users Group**, meets on the third Saturday of the month at 3 pm in the Community Room of Mercury Savings, 1095 Irvine Boulevard in Tustin. There is no membership fee, and everyone is welcome. Meetings include guest speakers and product demos; the group also has Special Interest Groups, a software library, and a newsletter. If you send your basic SASE to TLUG, 541-A Hamilton St., Costa Mesa 92627, you'll get a list of the programs available from the library, a copy of the newsletter, and a membership registration form; TLUG requests a donation of $1 to defray the handling expenses. Or if you prefer your information in voice mode, call **Don** at (714)650-1699 and he'll be glad to help you out.

**Savannah Brentnall** of Nantucket's Technical Information Group writes to tell us about the *Clipper* user groups in California. Says Savannah, "Each of these groups is run independently by *Clipper* users, and is a great place to exchange ideas, tips, etc."

The **Los Angeles Clipper User Group** meets on fourth Wednesdays at 7:30 pm; call **Teresa Padilla** at (213)452-0370. The **Valley Clipper User Group** hasn't decided on a meeting place and time yet, but give **Igor Lelchitsky** a call at (818)716-8790 and he'll keep you posted. The **San Diego Clipper User Group** meets on fourth Tuesdays at 7:30 pm, and your contact is **Mick Keily** at (619)569-8234. The **Orange County** group meets on fourth Thursdays at 7 pm, and **Steve Hilton** at (714)847-7123 will gladly give you further info. And finally, the **Fresno Clipper User Group** meets on fourth Thursdays at 7 pm; call **John Rogers** at (209)251-7527 for the details.

The **Mid-Wilshire PC User Group** is supported by Lotus Development and Forty Plus of Southern California. It meets on the second Thursday of the month in the conference room of Forty Plus, 3450 Wilshire Boulevard (corner of Wilshire and Normandie), Suite 510, in Los Angeles. Call **Robert Comer** at (818)790-5884 for more information.

The **San Fernando Valley Amiga Users' Group** has moved to a new meeting place: "The Meeting Place" in the Food Court on the east side of Fallbrook Mall. Meetings are usually on the last Tuesday of the month, although the June meeting will be on the third Tuesday, June 20. Activities start at 7 pm, and the meeting itself gets under way at 7:30. Call **Tony Alderson** at (818)985-0476 if you'd like to know more.

On the subject of the Amiga—the **1989 San Francisco Summer Amiga Festival** comes to the San Francisco's Concourse Exhibition Hall, 8th and Brannan, June 17 and 18. According to **Lion Kuntz**, who's one of the people putting this extravaganza together, the Festival will include what's being billed as the **World's Largest Combined Amiga User Group Meeting**, an event that will bring together groups from Sacramento, Palo Alto, Chico, Berkeley, Oakland, Santa Rosa, Santa Clara, and other Bay Area cities. Since the Commodore-Amiga Developer's Conference coincides with the Amiga Festival, a turnout of well over 1,000 is expected. Maybe a few Southern California groups might want to get in on this.

The meeting will include a brief address by **Jay Miner**, father of the Amiga, a live MIDI performance by **Phil Burk** and **Robert Marsanyi**, and announcements from various Amiga developers and Commodore-Amiga.

The Festival itself will also include the world's largest-ever exhibit of Amiga graphic art, as well as video demos and music performances. Not to mention, of course, booths featuring the wares of Amiga developers and local dealers. If you'd like more info about the show, give Lion a call at (415)431-1799; if you think you or your group might like to have an exhibit, call Lion at the same number, or East/West Computer Shows at (415)388-8893.

A new low-cost telecomm network has been created to serve the specialized needs of the estimated 30 million home-based business owners in the US. The **Home Office Business Network** is a joint venture between Minitel USA and Infonet, and offers information on such subjects as marketing, tax reduction, sales, and finance on a monthly basis, as well as electronic mail and conferencing. There is no subscription charge for this service; access charges are $10.20 per hour and can be billed to a credit card. PC, Mac, Apple II, and Commodore 64 versions of the terminal emulation software are available free of charge. Call **Richard Bruno** at (415)239-6162 for more info.

**Christopher Ambler** of San Luis Obispo tells us about his **Fubar BBS**, which runs software he's spent the past three years developing. Features include a complete UUCP package—mail, uucico, uuxqt, rmail, rnews, and readnews. It also includes typical BBS features like dial-your-match, ongoing story, and voting booths. Explains Christopher, "The main idea behind the system is to be as connectable as possible, and as I find more things to connect to, I will be adding new areas. The system is currently up for beta testing, so it's up and down hour by hour, but we're almost confident of its runability, and will soon have uninterrupted service." So if you'd like to partake in this adventure, call the Fubar BBS at (805)544-9234—it's running on a PC-XT at 300/1200/2400, 8-N-1.

**Speaking of fubar...Sysops Take Note:** We've had some trouble with our BBS listing files, with the result that obsolete information is now mixed in with the good stuff. Please read your listing in this issue, and if it's not correct please send us your current listing again. Sorry for the confusion.

Until next month, please keep the news coming—send US Mail to User Group Network, 5951 Canning Street, Oakland, CA 94609, fax to (415)652-4618, and email to **microx** on the WELL (415/332-6106) or **{pacbell, hplabs, ucbvax, apple}!well!microx** from Usenet, **MICROTIMES** on MacNET, **bex754** on The Source. We also cheerfully accept faxes at (415)652-4618 and (213)467-5486. ■

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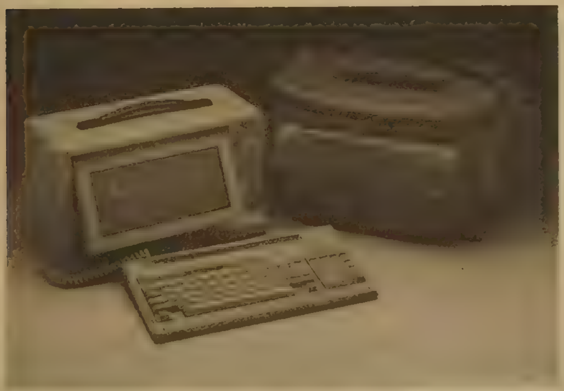

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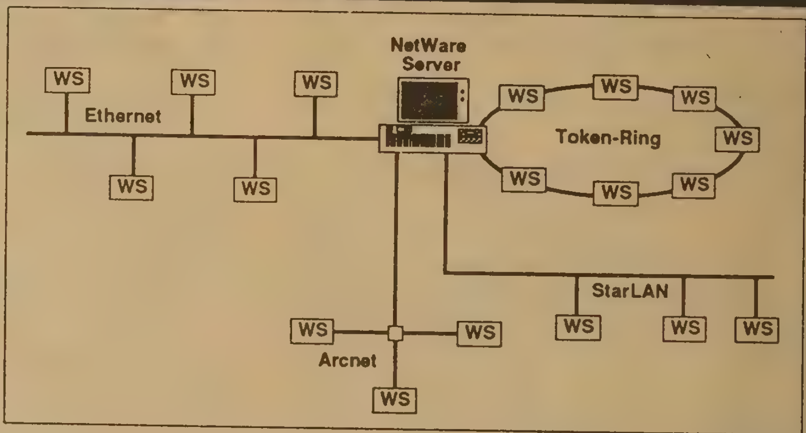

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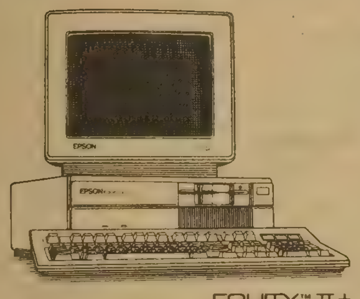

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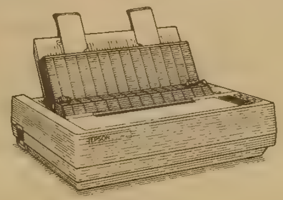

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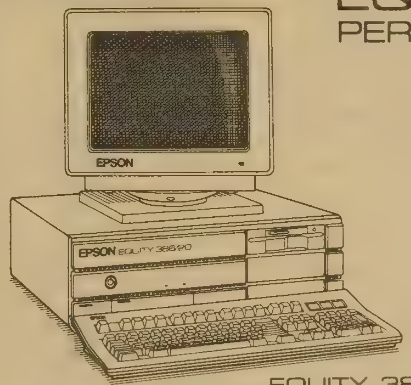

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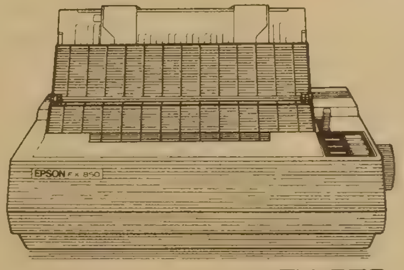

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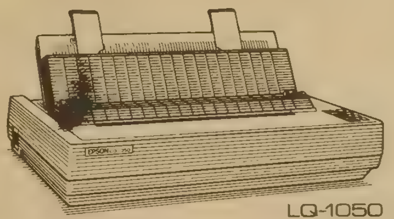

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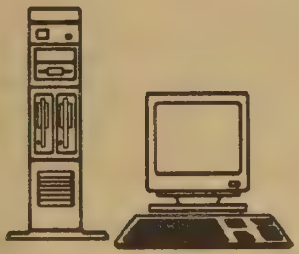

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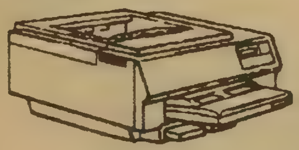

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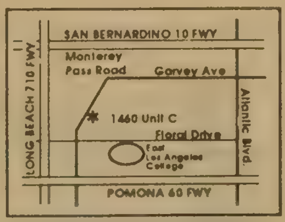

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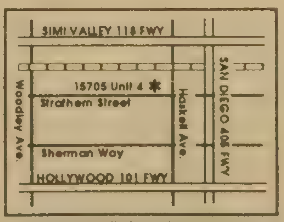

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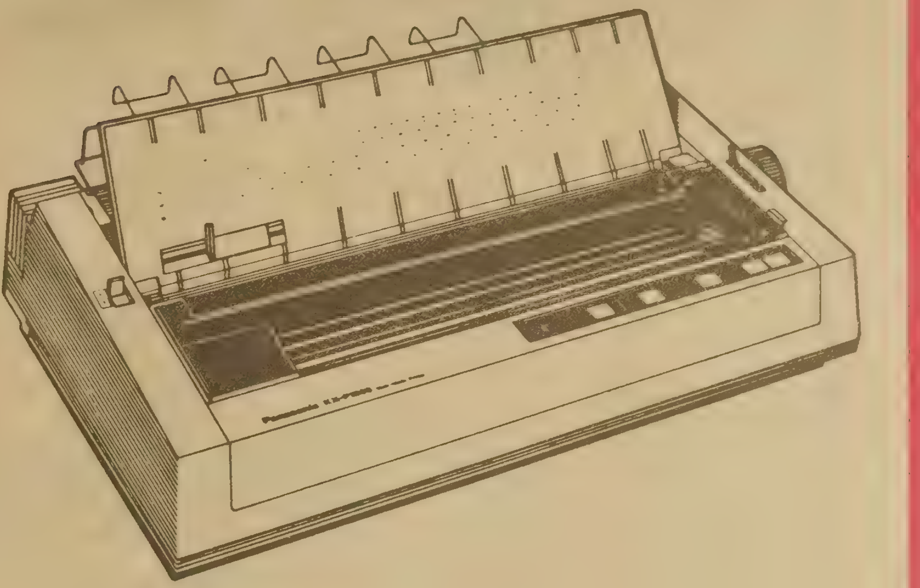

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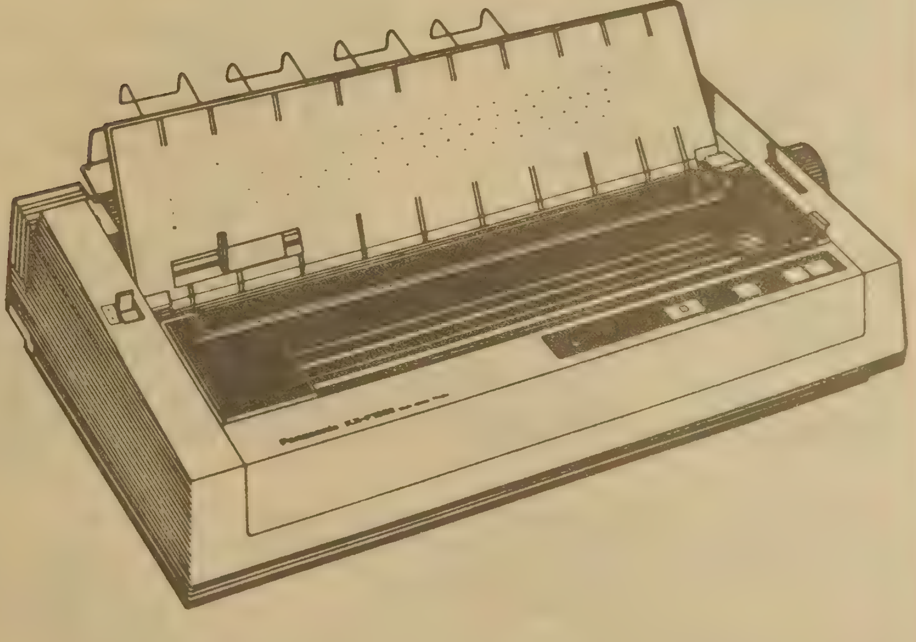

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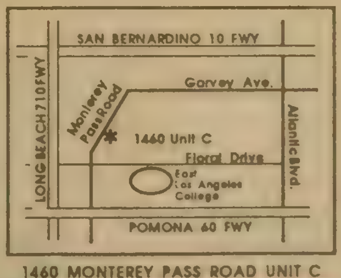

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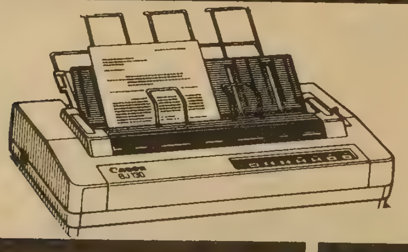

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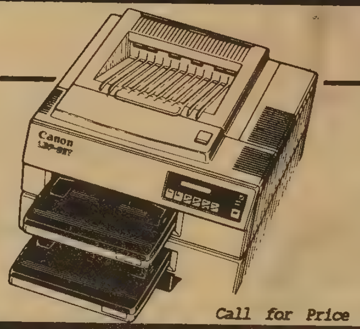

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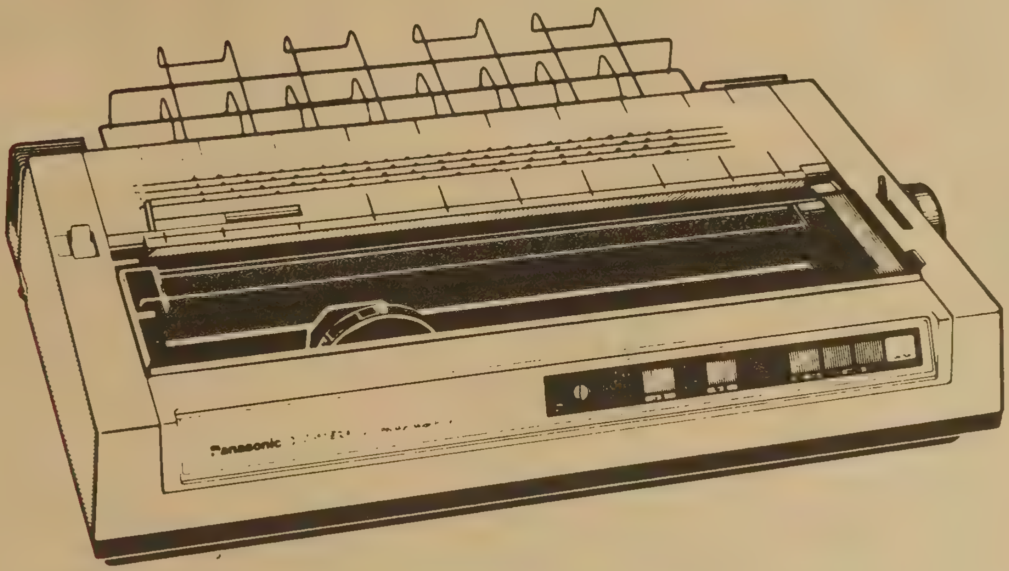

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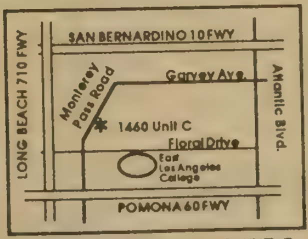

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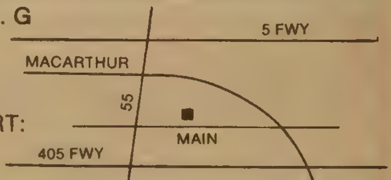

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**Hackney's Hideout BBS.** (916) 961-1042. 1200/2400 8-N-1. Includes AT&T users conference. Sysop: Rich Hackney.

**Night-line Network Central.** (916) 427-1107, 300/1200, 8:00 PM to 8:00 AM daily. Forum for individuals, clubs and organizations that want to network nationally with others. Sysop: Eric Thomas.

**Phoenix Landing BBS.** (916) 966-8243. 300/1200/2400. Macintosh oriented but many other computers are supported. File areas for Mac and other computers. Supports echomail conferences including ECHOMAC and BAYMAC.

## *ASSOCIATIONS*

**ACCPAC Accounting SIG Of UCLA Users Group.** Meeting: 2nd Wednesdays @ 7 PM. Users, CPAs, consultants and other business people interested in sharing information on Computer Associates ACCPAC Accounting Software. Call Donna Miller, (213) 393-0244.

**California Educational Computing Consortium CCCE.** For information write Herb Garrett, Long Beach City College, 4901 E. Carson Street, Long Beach, CA 90808.

**Computer Professionals for Social Responsibility.** Meetings: Most third Wed. 7:30 PM UCLA. CPSR/LS focuses on computer system risk and reliability and on privacy and civil liberties issues.

**International Blind Users Group (I-BUG).** Part of the National Association of Blind and Visually Impaired Computer Users. Membership consists of access to CompuHelp, a 24 hour online database/bulletin board system, and receiving CompuHelp On-Disk, a modem database-bulletin board system on two double-sided disks. (916) 783-0364 or 645-8036.

**L.A. Real-Time Problem Solvers.** Meetings: 4th Saturdays, 10 AM to 1 PM. Hawthorne Public Library, 12700 S. Greviellea Ave., Hawthorne. We speak A/D, SBC, RISC, FORTH and C. We support real-time, real-world hardware and software problem solving, such as firmware, device drivers, instrumentation and very smart toasters. (213) 371-0589.

**North Orange County Computer Club (NOCCC)** Meetings: Monthly on Sunday, @ Chapman College near downtown Orange. Help for beginners, SIGs, educational activities, monthly newsletter. Open to any computer user. (714) 998-8080.

**Realtor Microcomputer UG (RUG).** Meetings: 4th Thurs. 7 PM Pasadena BOR, cnr. Orange Grove & Los Robles, Pasadena, CA.

## *USER GROUPS*

### AMIGA

**Amiga Friends.** Meetings: 3rd Sun. Rancho Santiago College, Rm R-124, 17th & Bristol, Santa Ana. Call for current meeting info: (714) 775-7237 (24 hrs.) or write: P.O. Box 4186, Huntington Beach, CA 92605.

**Amiga Special Interest Group.** Meetings: 1st Sunday except holidays. Chapman College, 333 N. Glassell, Orange, CA. Amiga SIG is part of the North Orange County Computer Club, a thousand member organization together 12 years.

**Amiga User's Group Of Long Beach.** Meetings: 3rd Sundays, 1 pm, Mid-Cities National Bank, Lakewood and Artesia, Bellflower. Tech, Beginners, Video/Graphics sigs. (213) 422-8226/432-2088.

**Bits & Pieces Amiga Group of Anaheim.** Meetings: each Tues. 6:30-10 PM 1130-A North Kraemer Blvd., Anaheim, CA. DOS Classes, tech. help & more. BBS: (714) 630-8897.

**LAAUG-Los Angeles Amiga Users Group.** Meeting: 3rd Wednesdays @ 7:30 PM. Veteran's Auditorium at Overland Ave. & Culver Blvd. Many SIGs, Rookie, music, video, monthly PD disks.

**Pacific Computer Club.** Meetings: 2nd Thurs. 7 PM 391 S. Madison, Pasadena, CA.

**San Fernando Valley Amiga Users Group (SFVAUG).** Meetings: 2nd Thursdays, 7 pm, American Legion Hall, 7338 Canby Ave., Reseda. Call: Randy, (818) 719-9211.

**South Bay Amiga Dudes.** Meetings: 3rd Thursdays, 7 pm, Redondo Beach Blvd., Lawndale. Call: Charlie Breene at (213) 540-2834.

**South Orange Commodore Klub (SOCK).** Meetings: 3rd Saturday 9:00 A.M. Union Savings, 23688 El Toro Road, El Toro, CA. For Commodore 64/128 users and Amiga users. One-hour general meeting is followed by separate group meetings for each.

### AMSTRAD

**Amstrad Users Club Of Orange County.** Meetings: 3rd Saturdays, 10 am til 2 pm. Board Room upstairs in the Santa Ana Library, Civic Center & Ross streets. For more information call: (714) 953-6471.

**Amstrad Users Group, USA.** Meetings: Free mail and phone support for PCW. 12741 Matteson Ave. #3 LA 90066. (213) 397-7981.

### APPLE

**Apple/Valley Computer Club.** Meetings: 2nd Wednesdays, 7:30 pm, Valley Presbyterian Hospital, meeting room #3. Discussion on Apple, Mac, Amiga, IBM. BBS: (818) 782-6471. Up loading/down loading. Visitors welcome. Eamon games, misc. Voice: (818) 988-1752.

**Original Apple Corps.** Meetings: 2nd Sun. 12:00 Noon 3rd Floor Community Room, Santa Monica Mall. First Apple group ever. SIGs for AppleWorks, Telecomm, Educators, Macintosh. Call Fred Duffy at (213) 396-5515.

**Tri-City Apple Users Group.** Meetings: 3rd Thurs., 7:00 PM, 50 N. Hill Ave., Pasedena. Call (818) 846-6682. Friendly Apple II experts.

### ATARI

**Atari Computer Association Of Orange County.** Meetings: 2nd Sun. Rancho Santiago College, Room W101, Santa Ana. BBS: (714) 540-7378.

**North Orange County Computer Club Atari ST SIG.** Meetings: First Sundays, Chapman College in Orange. (714) 552-5185, or Bill, 633-4665, or Mac, 751-3090.

**Santa Clara Valley Atari Computer Enthusiasts (SCVACE).** Meetings: 1st Thurs. 7PM Mint Canyon Moose Lodge, 18000 W. Sierra Hwy, Canyon Country. 8-bit group. Atari ST special group now forming.

**South Bay Atari Computer Enthusiasts (SBACE).** Meetings: 2nd Tuesdays, 7:30 pm, Lomita VFW Hall, 1865 W. Lomita Blvd., Call: Alan, (213) 542-7870.

### CLIPPER

**Fresno Clipper User Group.** Meeting: 4th Thursdays, 7:00 pm. Call: John Rogers, (209)251-7527.

**Los Angeles Clipper User Group.** Meeting: 4th Wednesdays, 7:30 pm. Call: Theresa Padilla, (213)452-0370.

**Orange County Clipper User Group.** Meeting: 4th Thursdays, 7:00 pm. Call: Steve Hilton, (714)847-7123.

**San Diego Clipper User Group.** Meeting: 4th Tuesdays, 7:30 pm. Call: Mick Keily, (619)569-8234.

**Valley Clipper User Group.** 7:30 pm. Call: Igor Lelchitsky, (818)716-8790.

### COMMODORE

**Bits & Pieces Commodore Computer Group of Anaheim.** Meetings: each Tues 6:30 PM 1130-A N. Kraemer Blvd. (Kraemer & La Palma), Anaheim. Offers public domain software, demonstrations, interactive training on your computer. $33 annual dues.

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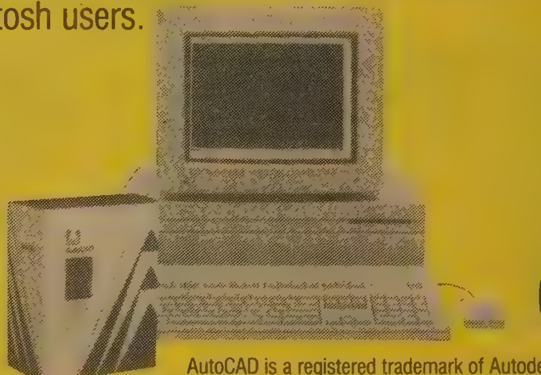

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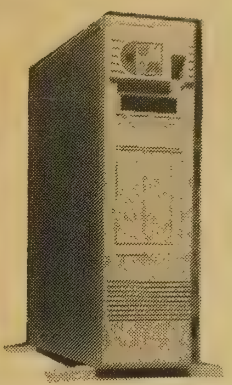

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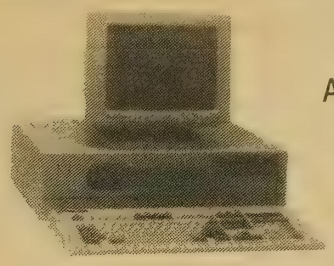

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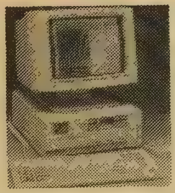

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**Commodore Helpers Of Long Beach.** Meeting: 2nd Saturdays 9 am, Mercury Savings And Loan, 4140 Long Beach Blvd. Long Beach C-64 & C-128. Call: (213)424-0508.

**Mother Lode Commodore Users Group**. Meetings: 2nd & 3rd Thursdays. Calaveras County Water District Board Room. Supports the Commodore PET, VIC, 64, Plus/4, C-16 & 128.

**Nebula 6.** Call BBS for more info & online glance at what group offers. BBS (714) 595-6577 300/1200/2400. Write for info: P.O. Box 1071, Walnut, CA 91788.

**OKOK Computer Users Group.** Meetings: 2nd Wed. 7-9 PM Altadena Public Library, 600 E. Mariposa. Call (818) 794-3243. Serves, Osborne, Kaypro, Commodore C128, PCs and compatibles and both MS-DOS and CP/M operating systems.

**Orange County Commodore Technical Users Group (C-TUG).** Meetings: 4th Sun. 11:00 AM ,4th & Tustin, P.O. 1497, Costa Mesa, CA . 92628. Newsletter; 2 BBS's; door prizes; demos, raffles, speakers, (714)750-3003.

**Pacific Computer Club.** Meetings: 2nd Thurs. 7 PM 391 S. Madison, Pasadena, CA.

**Pasadena Commodore Computer Club.** Meetings: 1st and 3rd Weds. 7:00 PM Circadian Room, Pasadena City College Cafeteria. Colorado Blvd & Hill, Pasadena. Call (818) 447-2212 after 2:30 PST or write P.O. Box 163, Arcadia, CA 91006.Supports C64 and 128 machines.

**South Bay Commodore Users' Group.** Meetings: 4th Tuesdays, 7:00 pm, Home Federal Savings Conference Room, 1670 Pacific Coast Highway, Redondo Beach.

**South California Commodore Users Group.** Meetings: 3rd Tuesday each month, 7:00 P.M., MidCities National Bank, Lakewood and Artesia Blvds., Bellflower, CA.

**South Orange Commodore Klub (SOCK).** Meetings: 1st Wed. 7 PM Laventhol & Horwath, Exec. Conf. Rm.7th Fl., 3699 Wilshire Blvd., LA, CA.

**The Orange County Commodore Club.** Meeting: 4th Saturdays, 11:00 am, Mercury Savings And Loan, Mercury Room, 7812 Edinger Ave., Huntington Beach, Call: Mike Moore at (714)968-6250, or Howard Phillips at (213)861-4165.

### dBASE

**UCLA PCUG dBASE SIG.** Meetings: 3rd Wednesdays, 7:30 pm. Call: (213) 874-7471.

**Valley West dBASE Users Group.** Meetings: 3rd Mon. 7:00 PM Blue Cross Of California, 21555 Oxnard St., Woodland Hills. Call (818) 343-9033 or write P.O. Box 16971, Encino, CA 91416.

### DEC

**DECUS Rainbow Pacific PC-LUG.** Meetings: 2nd Wed. 7:00 PM Digital Equipment Corporation, 6101 W. Centinela, Ave., Culver City. Digital Equipment Computer Users Society. Free to DEC users. Call Karen Danforth (818) 787-8736 or write P.O. Box 2278, Van Nuys, CA 91404.

### DESKTOP PUBLISHING

**VICUG–DTP.** (Valley IBM/Compatibles Users Group). Meetings: 2nd Fridays, 7:30–10:00 pm. Valley Plaza Recreation Center, 12240 Archwood St., North Hollywood, CA. Call: Harry Tischler, (818) 997-6000.

### EPSON

**San Fernando Valley and Los Angeles Epson QX User Group.** Meetings: 3rd Tues. 7 PM 6025 El Escorpion Rd., Woodland Hills. Call: (818)349-7417.

### IBM AND COMPATIBLES

**Calsonic PC Club.** Meetings: 1st Tues. 5:15 PM 9 Holland, Irvine, CA.

**Greater South Bay PC User's Group**. Third Thursdays, @ 7 PM, Building behind Christ the King Lutheran Church, 2706 W. 182nd St. Torrance. Newsleter, BBS, more! Guests welcome. Call for more information. Evening: (213) 532-2123.

**IBM & Compatibles Users Group-Ontario Area**. For information call: (714) 982-1270.

**Kenny's Computer Club.** Meetings: Each Saturday 8:00 A.M. t133 Locust St. Apt. 19, Long Beach, CA. For those with an interest in graphics, DTP, Lotus, Autocad, games, databases and word processing.

**Kern Independent User Group.** Meetings: Write Kern Independent PC User Group, P.O. Box 2780, Bakersfield, CA 93303.

**Long Beach IBM Users Group.** Meetings: 3rd Tuesdays. 7 PM, Woodruff Medical Plaza, 3816 Woodruff Ave., Room A, Long Beach. Contact: Jim Wells. Call: (213) 439-7114.

**Mid-Wilshire PC User Group.** Meeting: 2nd Thursdays, Conference Room of Forty Plus, 3450 Wilshire Boulevard, Suite 510, Los Angeles. Call: Robert cCmer, (818)790-5884.

**OKOK Computer Users Group.** Meetings: 2nd Wed. 7-9 PM Altadena Public Library, 600 E. Mariposa. Call (818) 794-3243. Serves, Osborne, Kaypro, Commodore C128, PCs and compatibles and both MS-DOS and C/PM operating systems.

**Orange Coast IBM PC User Group.** Meetings: last Sat. 9 AM Science Hall, Orange Coast College, Costa Mesa, CA.

**Orange County IBM PC Users Group**. Meetings: 2nd Thursdays 7:30 PM. Bradford Retirement Community Center, 1180 N. Bradford, Placentia. Meetings feature guest speakers on hardware and software topics related to the interest of our members. Other activities include sharing tips and problems, access to club library and a club newsletter. Call: Mike Lyons, 2114 W. La-Palma, Anaheim, CA 92801. (714) 774-3236.

**Pacific Computer Club.** Meetings: 2nd Thurs. 7PM 391 S. Madison, Pasadena, CA.

**Pasadena IBM Users' Group.** Meetings: 3rd. Wed. CalTech, Bridge Bldg., Rm. 201.

**PC*UG Computer Club.** For Hughes Aircraft Employees. Call (213) 334-3422.

**QUICK & EASY Mailmaster User Forum.** Meetings: monthly LA/Airport area. Users interested in maximizing performance of Quick & Easy.

**Riverside IBM Club.** Meeting: 1st Mondays, Riverside. Call: James Heidecke, (714)685-5407.

**Saddleback College IBM-PC Users Group.** Meetings: 3rd Sat. Room 210, Business and General Science Building, Saddleback College, Mission Viejo. Call Susan Gordon at (714) 582-4650.

**South Bay Users Group (SBUG).** Meetings: 1st Sun. Mercury Savings, Long Beach, CA.

**South County PC Users Group.** Meetings: 3rd Sat. 9 AM Great American Savings, 23688 El Toro Rd., El Toro, CA.

**Technical Users Group (TUG-NET).** Meetings: Call for info (818) 882-6045. BBS (818) 882-6045.

**The IBM & Compatibles User Group (ICUG).** Meetings: 4th Thurs. 6:30 PM or 7:30 CAL Lutheran Univ., 60 W. Olsen Rd., Thousand Oaks. Group is 5 yrs. old & has 150 members Meetings begin at 6:30 for beginners, 7:30 regular members.

**The Southern California K-Man Users Group.** Meetings: 1st Wednesday, 7:00 P.M., Laventhol and Horwath, Executive Conference Room, 7th Floor, 3699 Wilshire Blvd., LA. Demo of the month features new software and hardware.

**TRS Nybblers.** Meetings: 1st Wed. 7 PM 2006 W. Magnolia, Burbank. Supports MS-DOS, CP/M, IBM or IBM clones.

**Valley Computer Club—IBM.** Meetings: 1st Wednesdays, 7 pm, Burbank Bd. of Realtors Bldg., 2006 W. Mangolia, Burbank. Call: Wes Arnold, (213) 221-4433.

**VICUG (Valley IBM/Compatible Users Group).** Meetings: 4th Fridays, 7:30 pm, Mercury Savings Bank, 14801 Ventura Blvd., Sherman Oaks. Call: Harry Tischler, (818) 997-6000.

**VICUG–DTP** (Valley IBM/Compatibles Users Group). Meetings: 7:30–10:00 pm, Valley Plaza Recreation Center, 12240 Archwood St., North Hollywood, CA. Call: Harry Tischler, (818) 997-6000.

### KAYPRO

**OKOK Computer Users Group.** Meetings: 2nd Wed. 7-9 PM Altadena Public Library, 600 E. Mariposa. Call (818) 794-3243. Serves, Osborne, Kaypro, Commodore C128, PCs and compatibles and both MS-DOS and C/PM operating systems.

### LEADING EDGE

**Leading Edge Computer User Group of Ventura County.** Meetings: 2nd. Sat. 10 AM Camarillo Library, 3100 Ponderosa Dr., Camarillo, CA. Lectures on hard/floppy disk usage; program demos; beginner classes. Single: $20, couple $25.

### MACINTOSH

**APX, Inc.** An national intercorporate computer users information service with several communications channels including an electronic forum on MacNet, newsletters, and local and national meetings and special panels. Several local chapters exist, you can start one too. Call: (408)745-0665. Write to: Mike Bailey, APX, 370 Altair, PO 175, Sunnyvale, CA 94086.

**California State University Macintosh Users Group.** Meetings: California State University, Long Beach.

**Conjo Ventura Macintosh Users Group, Inc.** Meetings: 1st Thursdays, Thousand Oaks Public Library, 1401 E. Janss Road, Thousand Oaks. Call: Ed or Ellie Darling at (805) 584-8733.

**LAMG (Los Angeles Macintosh Group).** Meetings: Call (213) 278-LAMG or write 12021 Wilshire Blvd. #349, Los Angeles, CA 90025.

**MacValley.** Meetings: 3rd Tues. 7:30 PM Burbank High School Cafeteria at Burbank Blvd. and Third St. Call David Lagerson, (818) 998-5546or write P.O. Box 4279, Burbank, CA 91503.

**Moreno Valley Macintosh Users Group (MVMUG).** Product demos, newsletter, SIGS, BBS, more! For information about the club and meeting call: (714) 684-1337.

**Original Apple Corps.** Meetings: 2nd Sun. 12:00 Noon 3rd Floor Community Room, Santa Monica Mall. First Apple group ever. SIGs for AppleWorks, Telecomm, Educators, Macintosh. Call Fred Duffy at (213) 396-5515.

**San Gabriel Valley Macintosh Users Group.** Meetings: 1st Thursdays, 7:30 pm, Pasadena City Library, 285 E. Walnut. (213) 684-4266.

**SBAMUG (South Bay Apple Mac User Group)** Meetings: Last Wednesday of each month, 7:30 PM, Ticor Title, 4240 Artesia Blvd., Torrance. Call (213) 316-7738.

**Santa Barbara Macintosh Users Group**. Meetings: First Tuesdays, @ 7 PM, Goleta Library. Publishes a newsletter with reviews, offers advice, support for Mac users, discounts at local dealers. Call: Morris Herman, 987-5511, x 2083.

**West Orange County Macintosh Users Group (WOCMUG).** Meetings: Last Tuesday. F & M Bank in Rossmore Center, Orange County, CA.

**Whittier Area Mac Users Group.** Meetings: 2nd Saturdays, 10 am, Granada Heights Friends Church, 11818 S. La Mirada Blvd., Rm. C-21. (213) 691-1622.

### NETWARE

**Orange County Network Users Group (OCNET).** Meetings: 2nd Tues. Wyle Labs, Irvine CA. Open to users, consultants, all interested in NETWARE. Call Mark at (714) 955-0616.

**Netware User Group Los Angeles (LOSNET).** Meetings: 2nd. Wednesdays. Welcomes consultants, CPA's, dealers and users interested in sharing information on NETWARE and related products. Call Fane, (213) 452-1335. 2716 Ocean Park Blvd, Santa Monica 90405.

### OPEN SYSTEMS

**Open Systems Accounting, So. Cal Users Group (OSASCUG).** Meetings: 4th Wed. Wyle Labs, Irvine, CA. Users of Open Systems, Altos Accountant, CADO, & Rexon accounting software. Open to end users, dealers and consultants. Call Mark at (714) 955-1724.

**OSAS Systems Users Group Los Angeles (OSASUGLA).** Meetings: 1st Wednesdays. Welcomes consultants, CPA's, dealers, users and QI's interested in sharing information on OSAS and related products. Call Fane, (213) 452-1335. 2716 Ocean Park Blvd., Santa Monica 90405.

### OSBORNE

**OKOK Computer Users Group.** Meetings: 2nd Wed. 7-9 PM Altadena Public Library, 600 E. Mariposa. Call (818) 794-3243. Serves, Osborne, Kaypro, Commodore C128, PCs and compatibles and both MS-DOS and C/PM operating systems.

### TANDY/RADIO SHACK

**Los Angeles - Wilshire Color Computer Users' Group.** Meetings: 2nd Sat. 12:30-5:30 PM Felipe de Neve Library's Comm. rm., 2820 W. 6th St., LA, CA.

**South Bay Users Group (SBUG).** Meetings: 3rd. Fri. Mercury Savings, 22939 Hawthorne Blvd., Torrance, CA.

### TEXAS INSTRUMENTS

**LA 99er Computer Group**, 4th Wednesdays, @ 7:15 PM, Torrance Public Library, Torrance Blvd. @ Madronna. Call: Teresa Masters, (213) 271-6930.

**San Fernando Valley TI-99/4A User Group.** Meetings: 2nd Wed. 7:30 PM Doctor's Conf. Rm., Sherman Oaks Hospital, 4929 Van Nuys Blvd. Call for info: (805) 379-2937. Or write: SFV 99ers, 633 Hollyburne Ln., Thousand Oaks, CA 91360.

**TI Professional.** Call (213) 397-9668.

**TI Users Group of Orange County.** Meetings: 3rd Thurs. Peek Funeral Home, 7801 Bolsa Ave., Westminister. Call 633-7317.

### TIMEX/SINCLAIR

**Timex-Sinclair Users Group.** Meetings: 3rd Mon. 7 PM 11828 Jefferson Blvd., Culver City, CA.

**Timex-Sinclair.** Meetings: Call John W. Petersen (213) 545-9581 or George Kuby at (213) 551-9454. BBS: Grey Matter (213) 971-6260.

**Send your User Group or Bulletin Board listing to:**

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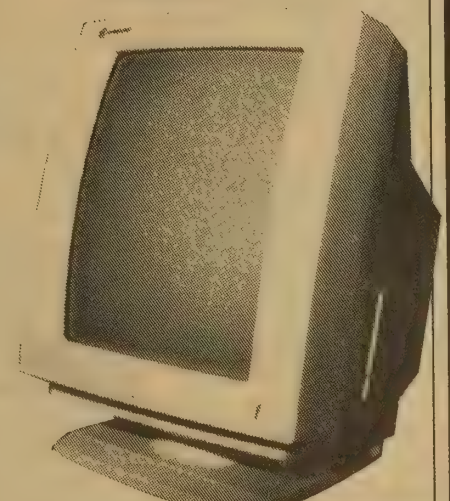

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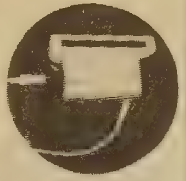

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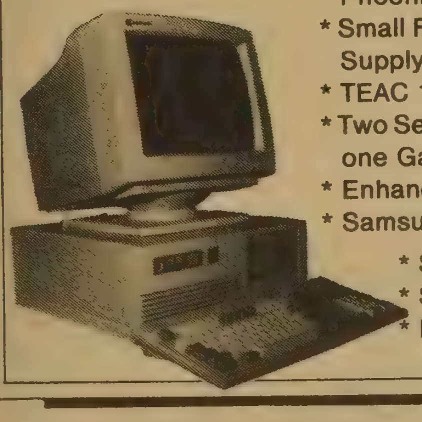

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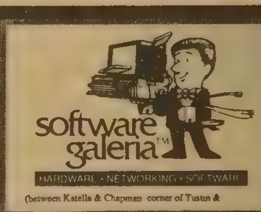

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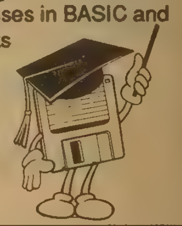

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| 16K RAM card | 34$^{95}$ |
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| IIE 256K-1meg RAM board | 119 |
| RF Modulators II, II +, IIE | 12 |
| No Slot Clock | $39 |
| MAX Flight Yoke IIE, IIC & IIGS | 85 |
| Super Save Fan Apple II, II + & IIE | 25 |
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| Seagate 40 Meg 28 ns | 409 |
| Seagate 80 Meg 28 ns | 575 |
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| Floppy Controller | 29 |
| XT 1.2 Meg Floppy Controller | 59 |
| 150 Watt P.S. | 59 |
| AT Style Keyboard | 59 |
| Clock Card | 29 |
| Serial Card | 34 |
| Multi I/O | 49 |
| AT I/O Card | 39 |
| Monochrome w/print | 42 |
| CGA Card w/Printer Adapter | 55 |
| EGA Autoswitch | 165 |
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| KX 1124 | 339 |

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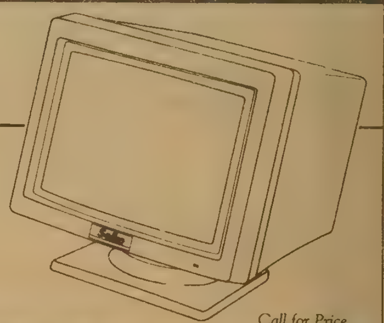

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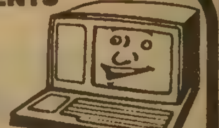

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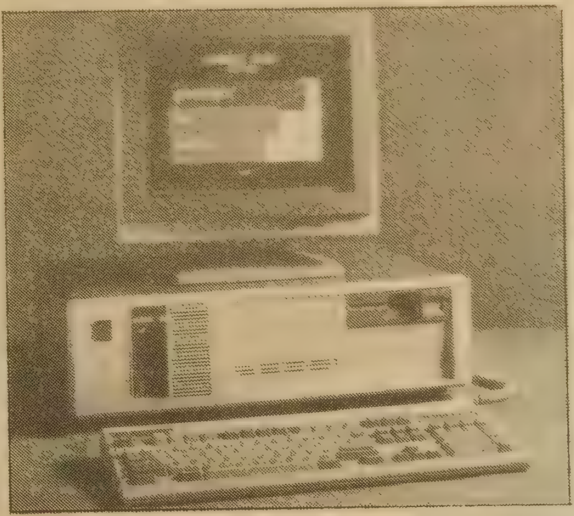

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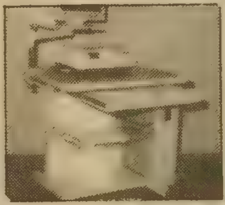

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Arriva Business Products 12
Balagam International 29
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Binary Computer 31
California Electronics 85
CNET 14
Compuclassics 119
Compumate Technology 92
Compusoft Data Services 100
Computer Business Center 104
Computer House 12
Computer Product Center 30
Computer Resources 117
Computer Supplies Ultd. 37
Computer Supply Club 25
Computer System Integrators 96
Computer Wiz 16
Computers For Rent 68
Computerlane 19
Computertown 54
Concord Computer Products 47
Creative Computers 89
Cypress Distributing 100,114
D-Data 42
Data Logic 98
Dav-Tech 17
Digitech 97,99,101
Disk Star 29
Dustin America 7
East West Computer Shows 100,114
Eastern Enterprises 55
Galaxy Systems 10
Gamma International 103
Gates/FA "Bravo" 2
Gatetronix 33
General Software 56,57
Grandis Distribution Corp. 87
Guenther 113
Hacker Electronics 51
Huntek 65
ICC 41,45,51
IIT 106
In Win Development INC. 63
Infinity Design Systems 14
Klynas 68
LA Computer Center 69
Lazer Life 98
Lazer Tek 30
MAC Surgeon 96
Markon Computer Science 58
MICA 52,53
Micro Star 79
Micro Warehouse 102
Microdeal 28
Mitsuba 98
National Software 81
PC & C 116
PC House 48,49
PC Max 75
PC Plus Corporation 8
PC Systems Design 93,95
PC Upgrades 108
PCI 120
PCR 58
PCT (Precision
Computer Technology) 26
PG Computers 105
PH-1 Computers 115
Pillarco 107
PRC Technology 91
Quest 94
Quick Start Computer Training 54
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Richard James 68
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Shecom 35
SLB Enterprises 32
Software Computer Xtra 45
Software World 20,21
Sorlet International 59
SOS 71,73
Subscription Coupon 116
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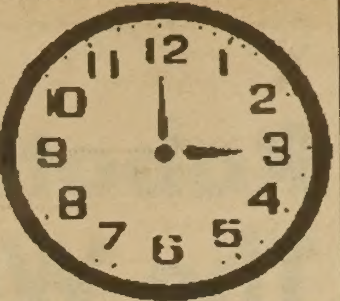

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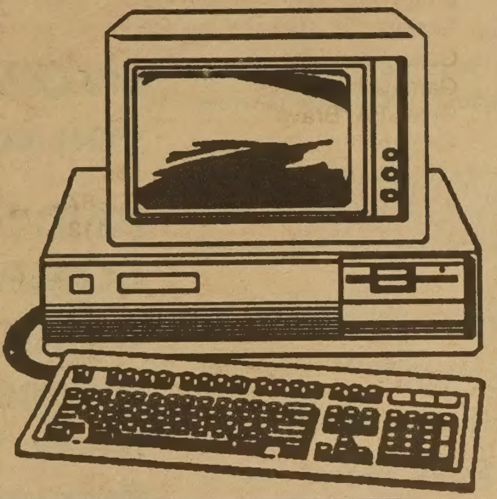

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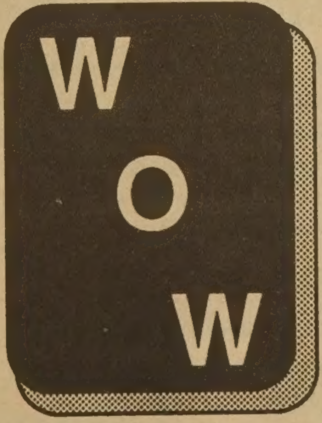

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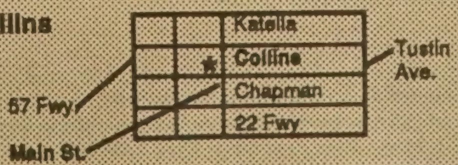

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DVORAK'S LAST COLUMN • BY JOHN C. DVORAK

# Robotics And Computer Sales The Wave Of The Future?

*On April 15 of this year I was granted an exclusive interview with a super-secret cyborg developed by the Defense Department in conjunction with the North American Computer Dealers Association. The model I talked to was still a prototype and had wires hanging out of its metal body every which way. Apparently all the knowledge of all the computer salesmen throughout the United States was somehow programmed into this thing. It was to become the epitome of the computer salesman of the future. The interview is reproduced unedited.*

**DVORAK:** First of all, do you have a name?

**ANDY:** Yes, my name is Andy the cyborg.

**DVORAK:** Is a cyborg different than a robot?

**ANDY:** Got me. I have no idea. *And* I couldn't care less to find out.

**DVORAK:** So you are the perfect computer salesman, I'm told.

**ANDY:** I don't know how they figure that. I haven't sold one system. In fact I can't even walk yet. But theoretically, yes, I am the epitomized computer salesman.

**DVORAK:** So with all this information programmed into you, how do you think the industry is doing?

**ANDY:** What industry? Steel?

**DVORAK:** The computer industry!

**ANDY:** How should I know? I'm a salesman, not an analyst.

**DVORAK:** Hmmm, ok. Well, what computer system is best? Do you think the 80486 will be used in desktop systems?

**ANDY:** I have no idea what system is best. I've never heard of the 486.

**DVORAK:** I thought all the brain power of all the computer salesman the whole country over was programmed into you.

**ANDY:** Absolutely correct. So I guess no one in a computer store has ever heard of the 486. Is this a trick question? You should note that as I scan my memory banks I find that I have no sense of humor, either.

**DVORAK:** I find this hard to believe. Are you sure that *all* the brains of all the salesmen were programmed into you?

**ANDY:** There was one guy in Alabama who refused to cooperate. Otherwise, yes.

**DVORAK:** And you've never heard of the 486 and you have no sense of humor? What else is wrong with you?

**ANDY:** Are these flaws? Maybe you're the one who is flawed, huh? Why don't you just ask me about selling computers? Pretend you're a customer and I'm the salesman.

**DVORAK:** Good idea. Ok, I just walked in.

**ANDY:** Hello, sir, can I help you?

**DVORAK:** I just wanted to browse.

**ANDY:** Then get out, schmuck. We don't want tire kickers in here!

**DVORAK:** Hey, hey, hey! What gives?

**ANDY:** Sorry. That seems to be the consensus approach. Try buying something.

**DVORAK:** Okay. Do you carry Compaq?

**ANDY:** Compaq? COMPAQ? Are you trying to tell me my business? Do you think you're an expert throwing around fancy terms? Look pal, I'm the expert, okay?

**DVORAK:** Compaq is a brand, not a term.

**ANDY:** No, no, no. It's a term meaning small footprint.

**DVORAK:** C-O-M-P-A-Q! Compaq. It's a brand.

**ANDY:** I knew that! But it was named after the term. They're a relative newcomer. Yes, we do have Copacks.

**DVORAK:** COMPAQ! Not Copacks. What models do you have?

**ANDY:** We're sold out of them right now. The company isn't doing too well. We recommend a Buzzard 386. It's the number-one selling computer in the country. Outstanding product. We have them with memory included and a big 30 megabyte hard disk. Best you can buy.

**DVORAK:** Cache?

**ANDY:** Or check or credit.

**DVORAK:** No, does the Buzzard have a caching controller?

**ANDY:** I have no ideas about the finances or the company's treasurer. I think they pay their employees by check, though.

**DVORAK:** I'm asking about a disk controller for the hard disk.

**ANDY:** It's a scuzzy controller.

**DVORAK:** On a PC? Who makes that?

**ANDY:** All PCs have scuzzy controllers. You shouldn't try to be an expert if you don't know what you're talking about. It began with the IBM PC/XT. XT means scuzzy.

**DVORAK: Okay. Do you carry Compaq?**

**ANDY: Compaq? COMPAQ? Are you trying to tell me my business? Do you think you're an expert throwing around fancy terms? Look pal, I'm the expert, okay?**

**DVORAK: Compaq is a brand, not a term.**

**ANDY: No, no, no. It's a term meaning small footprint.**

**DVORAK:** XT does not mean scuzzy!

**ANDY:** Look pal, I've been selling machines for a decade. I know what I'm talking about!

**DVORAK:** Ok, stop. Simulation over!

**ANDY:** How did I do?

**DVORAK:** Not bad. You are definitely the epitomized computer salesman. Good work. You don't know a damn thing about computers, do you?

**ANDY:** I'm a salesman, not a nerd.

*I reached over to a wire hanging from this robot and angrily yanked it off. The contraption soon started smoking and its head fell off. I looked at the heap of tin as it lay on the floor. Just then a guy came running into the room wondering what the crashing noise was.*

*"What happened?" he asked, his eyes bugged open.*

*"It said something about a stomach ache, then collapsed."*

*"A stomach ache?"*

*"Yes, he said he ate one too many chips last night!"*

*Ok, ok. So I don't have a good punch line for this column. The next time you go into a computer store, though, and get a dummy for a salesman, ask them if they know Andy.* ■

---

*John C. Dvorak graduated from the University of California. He is a contributing editor of PC Magazine and MacUser, considered by many to epitomize the contrarian view of things—a charge that he vehemently denies. Dvorak's motto is: If you have nothing nice to say, then don't say anything at all.*

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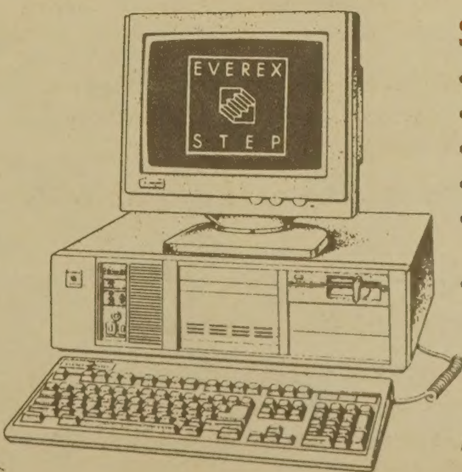

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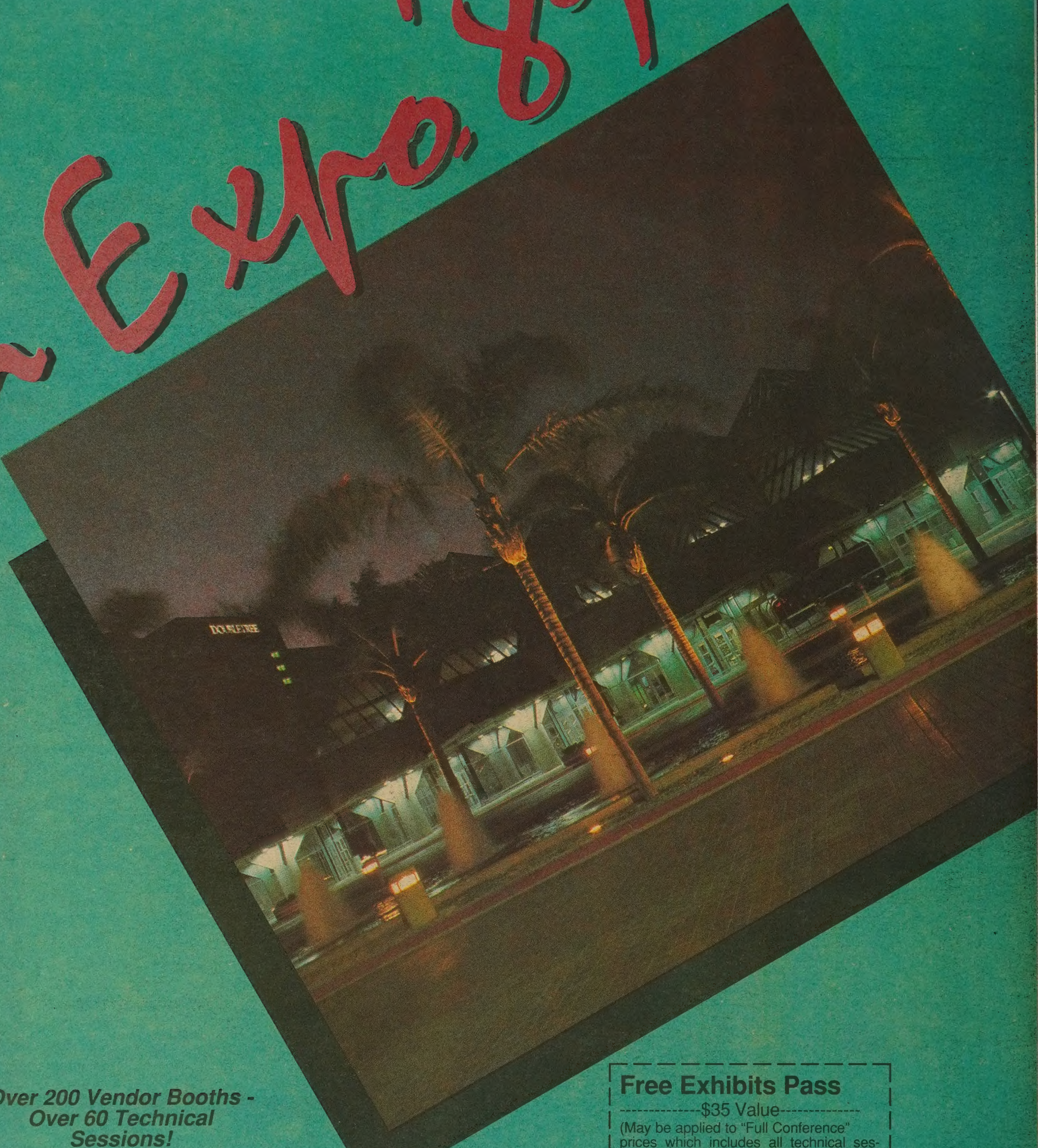

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